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STATE OF NEW YORK

ANNUAL REPORT

OF THE

ATTORNEY-GENERAL

For the Year Ending December 31, 1918

MERTON E. LEWIS

Attorney-General

ALBANY
J. B. LYON COMPANY, PRINTERS
1919



REPORT

For convenience in use, this report is published in one volume. The first part of this volume is given up to a discussion of general office activity and recommendations. The second part contains the opinions of general public interest, formal and informal, reports, memoranda and communications.

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STATE OF NEW YORK

OFFICE OF THE ATTORNEY-GENERAL

To the Legislature of the State of New York:

In conformity with the requirements of section 66 of the Executive Law, I have the honor to submit herewith the annual report of the Attorney-General for the year ending December 31, 1918.

Dated December 31, 1918.

MERTON E. LEWIS,
Attorney-General.

REPORT

SIRS :

In submitting my report for the year just ending, I feel that I owe it to the deputies and employees of the office to commend their loyalty to the State and their devotion to the duties of the positions which they hold. Probably in no previous year has there been transacted in the office of the Attorney-General any such amount of important legal business as has been transacted during the year 1918. A great number of difficult and important cases, involving novel and interesting questions of law have been disposed of with results in the aggregate highly satisfactory.

In many of these difficult cases, the deputies of the Attorney-General have been compelled to meet and contest with lawyers of the very highest type, men who in their localities are recognized as leaders of their profession. It has frequently happened that lawyers representing claimants in the Court of Claims and representing plaintiffs and defendants in actions in which the State is a party, have in a single case received compensation many times greater than the annual salary of the deputy opposing them. It is because of this fact and because of my realization of the inadequacy of the compensation of the deputies of the Attorney-General that I recommend in the preliminary estimate of the financial requirements of the office for the coming year increases in the salaries of substantially all deputies. Another reason for such recommendation is found in the fact that the increase in living costs has been so great during the past year, as well as in during previous years, as to make the compensation now being paid to the deputies and employees of the office scarcely greater in purchasing power than one-half of such salaries were in purchasing power two or three years ago. I regard it as a matter purely of justice and fair dealing to provide for a substantial increase in the salaries of all deputies and employees of the office.

I also recommend, without hesitation and without doubt of the soundness of my judgment, that the salary of the Attorney-General be increased to a sum at least equal to the salary now paid and which for many years has been paid to each of the members of the Public Service Commission. The problems with which the Attorney-General of the State is called upon to deal are, generally speaking, of vastly more importance to the people of the State than are the problems of the Public Service Commission. The salary of the Attorney-General has not been increased in recent years and no incumbent of the office can afford to continue to serve the State in that capacity at the salary now fixed by law. If the State's interests are to be properly protected in the courts and in the various boards and commissions of which the Attorney-General is by law a member, there should be such an increase in the salary of the office as to make the office financially attractive to men of high legal attainments.

The general litigation of the office has not decreased materially in volume. There are now pending many difficult and important cases awaiting trial. On the first day of September of this year there were seventy appeals pending in the appellate courts in which it became necessary to prepare briefs to be used upon the argument thereof. This work has been and is being cared for, with results so far as results have been obtained, highly satisfactory to the State.

Not the least of the duties of the Attorney-General is his work in connection with the meetings of the Canal Board, the Commissioners of the Land Office and other boards of which the Attorney-General is a member.

The passage of chapter 585 of the Laws of 1918, providing for the cancellation of Barge canal and other contracts because of war conditions created since such contracts were entered into by the State, has imposed upon the Attorney-General as the legal adviser of the Canal Board a very difficult and important work which has required careful study and constant attention. The practice in connection with such matters has been well established and is now being followed by the State Engineer, and the progress thus far made is gratifying. It is probable that settlements will be reached in all of the matters in which contracts have been

cancelled at an early day in the coming year. By the method provided by this act, the State has recognized moral obligations and such recognition will doubtless result in saving many of the Barge canal contractors from financial ruin.

COURT OF CLAIMS

During the past year by far the most important work transacted in the office has been the work of disposing of the claims pending in the Court of Claims. In the effort to reduce the accumulated mass of business in that court I have only words of commendation for Deputy Attorney-General Carey D. Davie, the deputy in charge of the Court of Claims bureau of the office, and of the deputies working under his direction, as well as for the members of the court itself. All have shown a keen desire to aid in the disposition of claims and particularly in the disposition of claims for the appropriation of lands taken by the State for Barge canal improvement and other purposes.

Awards in these claims carry interest from the date of the appropriation of such lands. The effort has been made to dispose of such claims as rapidly as possible, and a great number have been disposed of. I am submitting herewith a list of all claims tried or disposed of in the Court of Claims during the year. This list shows the name of the claimant, the amount of the claim and the amount of the award, or other disposition of such claim. A casual inspection of this list will, I think, compel the conclusion that the deputies of the Attorney-General have been diligent and faithful in the performance of their duties.

The work of the Title Bureau, in charge of Deputy Attorney-General Anson Getman, has progressed satisfactorily during the year. The examination of titles to barge canal lands has resulted in materially reducing such titles, and the work of examining such titles will, I think, be entirely completed during the next calendar year.

The adoption by the State of the policy of acquiring forest lands in the Adirondack and Catskill regions has compelled the diversion of some of the title examiners who formerly were engaged in the examination of titles to canal lands, to the examination of titles

to such forest lands. Thousands of acres of forest lands have been purchased by the Conservation Commission with the approval of the Commissioners of the Land Office. Large parcels have also been appropriated under the provisions of the law, titles to all of which have been and are being examined by Mr. Getman and his assistants in the Title Bureau. Great care is necessary in the examination of these titles, because of the indifference of the former owners in maintaining careful records of transfers and procuring and recording such instruments as affect the titles to such lands. Many thousand of acres have been acquired, and other thousands are being acquired, titles to which are based upon tax sales. The examination of such titles oftentimes involves the examination of the records of tax sales made many years ago. This necessitates a careful examination of the law as it existed at the time such sales were held. The work necessarily progresses somewhat slowly, as it has been necessary to educate title examiners who were skilled in the examination of ordinary titles to the intricacies and difficulties of forest land titles. The volume of this class of work is bound to increase as the work of the Conservation Commission progresses. The appropriation of lands by the State will also necessarily result in an increase in the volume of claims that will be filed in the Court of Claims, which will have jurisdiction over the trial of claims filed by the owners of the land for the purpose of recovering the value of such lands.

Deputy Attorney-General E. Clarence Aiken has continued during the year in charge of the appeals from awards of the Industrial Commission. During the year he has argued 193 appeals in the Appellate Division and 59 appeals in the Court of Appeals.

Deputy Attorney-General Charles M. Stern has continued in charge of prosecutions for violations of the agricultural, pure food and other laws with signal success. I submit herewith statement showing the moneys recovered in actions of this character in which Mr. Stern has represented the people of the State.

The enactment of Chapter 435 of the Laws of 1917, commonly known as the Fenner Law, has imposed upon the Attorney-General's office a substantial additional burden. A very great variety of questions has arisen under the provisions of this statute, which

have been handled with success and entire satisfaction by Deputy Attorney-General James S. Y. Ivins.

In this connection I may properly, I think, call attention to the fact that the burden upon the State due to the enactment of this statute has not been a light one. A large number of employees of the State enlisted or were drafted into the military and naval service of the United States and during their absence have received under the provisions of the law the difference between the military pay of the positions which they have held and their civil pay in the positions which they had previously held. This, however, did not constitute all of the burden referred to. In almost every instance the positions vacated by reason of such enlistments or because of the incumbents having been drafted into military service, were necessarily filled by temporary appointees to whom the salaries of the positions have as a matter of course been paid regularly.

I have recently communicated with the Secretary of War and the Secretary of the Navy, calling their attention to these facts and have requested that all such persons in either the military or naval service be discharged from such service and permitted to return to their civil duties at the earliest date practicable. I am advised by the Secretary of War that my request has been favorably considered and that discharges will be granted as rapidly as possible. I have received no reply from the Secretary of the Navy.

The Conservation Bureau of the Attorney-General's office has remained in charge of Deputy Attorney-General A. Frank Jenks, who has rendered valuable services in the trial of cases and the argument of appeals. A statement is attached hereto showing the amount of moneys recovered in penalty actions during the year through the operations of this bureau.

There have been many hearings upon applications for leave to commence actions in the nature of *quo warranto*, which have required the attention of Second Deputy Attorney-General George A. Fisher. These matters have been disposed of promptly and I believe with general satisfaction to the parties concerned.

The work of the Special Franchise Tax Bureau has continued during the past year under the direction of Deputy Attorney-General B. Coe Turner. It is a matter of satisfaction to me to be able

to state that the work of this bureau is now in better condition than at any time since my connection with the office of the Attorney-General commenced in 1915. The results of Mr. Turner's work have been very gratifying, both to the municipalities affected by such litigations and to me as Attorney-General, charged with protecting the interests of the State therein.

Satisfactory progress has also been made in the disposition of litigations pending in New York City for the review of special franchise tax assessments levied in the various courts of Greater New York. This work has been in charge of the Hon. Martin Saxe, who was designated by me in November, 1917, under the provisions of section 47 of the tax law.

A large number of cases pending in the Surrogate's Courts of the State have been handled with great skill by Deputy Attorney-General Alex T. Selkirk. In addition to this work, Mr. Selkirk has also prosecuted many actions for the recovery of delinquent corporation franchise taxes, and has succeeded in recovering for the State a very substantial amount of money. The schedule of such recoveries will be found attached hereto.

A large number of important formal written opinions has been rendered by the Attorney-General to the various heads of departments and public officers throughout the State. The preparation of these opinions has involved a great deal of study and careful thought, and I am pleased to be able to say that no opinion rendered by the Attorney-General has failed to command the approval of the courts whenever such opinion has been brought into question. In other words, no opinion rendered by the Attorney-General during the past year has been reversed by any court of the State.

During the calendar year of 1918 the desk in the office of the Deputy Attorney-General devoted to looking after the affairs of the inmates of State Hospitals, has continued the work of securing the appointments or committees for patients in State institutions. It has also continued with the collecting of maintenance and the securing of costs and disbursements in the matter of committee proceedings, of which there have been a total of 541. The total amount of maintenance collected for the year 1918 amounted

to \$144,034.99. The costs and disbursements collected have amounted to \$5,685.71.

The office of the Attorney-General has represented incompetents in 336 various proceedings in Surrogates' Courts, and has looked after the interests of insane patients in 448 cases other than committee proceedings and surrogates' matters.

There have been a large number of soldiers returned from overseas who have been rendered incompetent as a result of active military service. The Attorney-General has deemed it wise to make an arrangement with the United States government whereby these soldiers, who are confined in State institutions, may have their financial affairs cared for by the State free of charge.

PUBLIC LANDS AND LANDS WHICH HAVE ESCHEATED TO THE STATE

I feel called upon to advise the Legislature that a large amount of real estate belonging to the State as a result of tax sales and to some extent as a result of escheats and in some instances as a result of the foreclosure of United States Loan Commissioners mortgages, is yielding very little revenue as compared with the value of such properties. I think that I am safe in asserting that there are thousands of parcels of lands acquired by one or the other of the methods referred to, which are receiving no attention, are withdrawn from the assessment-rolls of the various assessment districts in which they are located, and which might be made the source of considerable revenue in the way of annual rents or might with propriety be sold and the value thereof covered into the treasury. The Comptroller's land list will show the parcels of land referred to.

There seems to be no effective method for caring for these lands under the law as it now stands. Section 67 of the Public Lands Law authorizes the Commissioners of the Land Office to employ an agent to explore lands supposed to be escheated and to collect evidence in relation to such escheat. The compensation and expenses of such agent are, however, limited by the section referred to, to the sum of \$500 in any one year. It is apparent to all that the small compensation permitted under the statute is inadequate for the accomplishment of any practical result. The position has

been and is vacant, and will doubtless continue to be vacant until a reasonable compensation shall be fixed and a reasonable allowance made for traveling expenses in the performance by the land agent of the duties of the position.

I recommend an amendment to section 67 conferring upon the Commissioners of the Land Office in addition to the power which they now have to employ an agent, the power to fix his compensation and audit his bills for actual and necessary expenses, and recommend an appropriation of a sum sufficient to enable the Commissioners of the Land Office to secure the services of a competent man to act as their agent and to investigate all lands now owned by the State, to accomplish the leasing thereof where desirable and to recommend the sale of such lands whenever such sale may seem desirable.

The Legislature by an amendment to the Public Lands Law enacted in 1917, imposed upon the Attorney-General the duty of commencing actions to annul letters patent to lands under water granted to applicants therefor, where such grants contained conditions which had not been complied with within the period fixed by the grants for compliance. I have found it impossible to comply with the requirements of the statute, for the reason that prior to the commencement of such actions it has been found to be necessary that abstracts of title be procured in order that all parties having any interest in such lands may be made defendants in such actions. There has been no fund available from which the cost of procuring such abstracts could be paid. For that reason I have been able to commence but one or two of such actions.

There are many of these actions which should be commenced and which can, in my opinion, be maintained. The prosecution of such actions is likely to result in the recovery for the State of many parcels of valuable lands under water from which the State will be able to obtain a considerable revenue.

I recommend an appropriation of an amount sufficient to enable the Attorney-General to obtain such abstracts of title and also to employ such examiners as may be necessary for the purpose of examining such titles when abstracts shall have been obtained.

It has been the custom of the Comptroller to hold tax sales at intervals of five years.

In many instances there are assessments against the same piece of land for five successive years, after which the lands are sold for the nonpayment of the taxes assessed for the five successive years.

Sales have been made in some instances to the State and in others to individuals and deeds have been issued accordingly.

Occasionally the validity of the said tax deeds has been under consideration by the courts. The Court of Appeals held in *Nehasane Park Association v. Lloyd*, 167 N. Y. 341, at page 437;

“When the State proceeds at one time to sell land for unpaid taxes levied during a series of years, some of which are valid and others invalid, the title of the owner against whom the sale is made is not thereby divested. By mingling good and bad together the State cannot give a valid title to the property thus assessed.”

There are other decisions to the same effect.

Under these decisions a tax deed may be void because of some defect in the proceedings in one year, even though the proceedings in the other four years are valid.

I am therefore of the opinion that the Comptroller should hold tax sales annually so that the good sales may be separated from the bad and valid titles created accordingly.

CODE AMENDMENT

Section 190 of the Code of Civil Procedure was amended by Chapter 290 of the Laws of 1917. This amendment operated to limit the right of appeal to the Court of Appeals. It applies not only to actions between individuals and private corporations, but also limits the right of the State to take an appeal except in cases specifically authorized. It has happened that the State is deprived in some cases where an appeal is desirable, of the right to take such an appeal to the Court of Appeals. A situation may arise at any time which may have disastrous consequences to the State.

I therefore recommend that subdivision 1 of section 190 be amended by adding at the end thereof the words:

“or where the State of New York shall be a party or any officer of the State of New York in his official capacity.”

The enactment of this amendment will permit of an appeal to the Court of Appeals in cases where the State or an officer of the State is a party to the litigation.

PUBLIC PEACE AND SAFETY ACT

Chapter 595 of the Laws of 1917, commonly known as the Public Peace and Safety Act, was enacted in order that there might be in the hands of the Attorney-General power to conduct summary investigations and aid in the protection of life and property, in the prevention of crime and the enforcement of law during the period of war conditions now brought to an end. This act has been exceedingly effective and under its provisions many important investigations have been conducted, most of which have been under the management of Deputy Attorney-General Becker. Mr. Becker has devoted the greater part of his time to this work. Numerous requests for investigations were received from the French government, the British government, the United States Department of Justice, the Military Intelligence Bureau, the War Trade Board and the Adjutant General of the State of New York. These requests have been honored and the work of conducting investigations has been performed by Mr. Becker with great skill and ability.

The powers granted by this act, giving to the Attorney-General the right to subpoena witnesses and to compel the production of books and papers and to compel witnesses to testify, have been of great value. These powers, however, while well suited to war conditions and in fact demanded by the necessities of the condition which has prevailed during the past two years, are powers which should not be continued in peace times.

I, therefore, recommend that chapter 595 be repealed in its entirety, the repeal to take effect with the proclamation of peace by the President, or within a reasonable time thereafter.

SUPERSESSION OF DISTRICT ATTORNEYS

In my last annual report I referred to the order of the Governor directing the Attorney-General to take charge of prosecutions arising out of the murder of Barnett Baff in New York city.

After the conviction of Joseph Cohen of murder in the first degree and of Abraham Graff of manslaughter in the first degree, Mr. Becker and Special Deputy Attorney-General James O'Malley argued for the people upon Cohen's appeal to the Court of Appeals. The conviction was affirmed. Subsequently, Cohen applied to the United States Supreme Court for a writ of certiorari, which was denied. The appeal of Graff was abandoned. Indictments of others charged with complicity in the murder have been disposed of by pleas of guilty, and in the case of William Simon by his confession and an agreement for immunity. Further investigations, aiming to obtain sufficient proof to bring about the conviction of persons believed to have been the ultimate instigators of the murder, are now in progress.

STIELOW CASE

The investigation of the Stielow case was in progress at the date of my last annual report. This investigation was conducted by Special Deputy Attorney-General George H. Bond, of Syracuse, appointed for that purpose by me after I had been directed by the Governor to supersede the district attorney of Orleans county. Mr. Bond performed a great service for the State in the conduct of this investigation and submitted a report to the Governor which led the Governor to commute the sentence of life imprisonment of the defendant, Charles Stielow, which resulted in his immediate discharge from Auburn Prison, where he was serving such sentence.

NEW YORK CITY BUREAU

During the year just ending, the New York City Bureau has been in charge of Deputy Attorney-General Alfred L. Becker.

As a result of an arrangement made on behalf of the Attorney-General by Mr. Becker, the New York State Food Commission entered into an agreement with the United States Food Administration which resulted in the practical consolidation of the powers of the two bodies exercised for the purpose of controlling the sales of food within the State. Deputy Attorney-General Charles P. Robinson, and later Deputy Attorney-General Samuel A. Berger, have acted as counsel to the Food Commission, the work

of which has been very heavy. For many months they gave all of their time as the legal advisers of the combined Federal Food Board and the administration of the laws of both Federal and State relating to the sale of food.

With the assistance of the deputies under his direction, Mr. Becker has acted as counsel to Hon. Benjamin B. Odell, the State Ice Controller, in the preparation of the contracts entered into by him with the ice manufacturers and harvesters and in the several litigations growing out of the administration of his duties.

The New York office has been much occupied with difficult foreclosures of mortgages executed to the loan commissioners, with applications for the commencement of actions against corporations and their officers, with actions for violations of the Agricultural Law and pure food laws and with proceedings in Surrogates' Courts for the probate of wills and judicial settlement of accounts in which aliens are interested or there is a claim of escheat. The office has coöperated with the Alien Property Custodian in securing the payment to him of sums bequeathed to or inherited by enemy aliens. The work of obtaining appointment of committees in lunacy proceedings has largely devolved upon the New York office and entails a great volume of work. There have been numerous prosecutions for violations of the law prohibiting the practice of dentistry without license. There have been several litigations instituted by public service corporations, challenging the validity of rates fixed by statute or by the Public Service Commission, notably the Kings County Lighting Company and the Brooklyn Borough Gas Company cases, in which the Attorney-General has been represented by deputies attached to the New York office.

Chapter 222 of the Laws of 1918 amended section 315 of the Judiciary Law relating to fees of Supreme Court stenographers for services performed at the request of official referees. The compensation of official stenographers is, generally speaking, paid by the counties within which such stenographers render services. By the amendment of 1918 it is made the duty of a Supreme Court stenographer to furnish, when required by an official referee, copy of the testimony taken by him, for which such stenographer shall be paid at the rate of ten cents a folio, which

payments when made become a charge upon the counties in which such official referee resides. This operates to impose an obligation upon counties which have no special interest in the results of the litigation.

I recommend that section 315 be amended so as to provide for the payment for services of the stenographer in cases tried before an official referee in which the State is a party out of the funds provided for the expense of the Court of Claims.

In accordance with the precedent which I established last year in my annual report, I submit herewith a detailed statement containing the names of all deputies employed in the office and of all employees, together with the amount of compensation paid to such deputies and employees.

I also submit herewith a balance sheet showing the amount of appropriations made for this Department for the fiscal year, the amount expended during the calendar year and the balance remaining available for the unexpired portion of the fiscal year.

In the case of *Smith v. The State*, an award of approximately \$250,000 was made to the claimant by the Court of Claims. This claim arose under a contract entered into on June 13, 1916, by which the claimant agreed to furnish to the State 2,233 artillery and cavalry horses and draft mules. The contract provided for a sale price of \$165 each for artillery horses, \$140 each for cavalry horses, \$175 each for large mules and \$160 each for small mules. It was further provided that such animals would be hired by the State at the rate of \$3 per day for a period of at least sixteen days and would be foraged by the State for a period of twenty-one days. On June 25, 1916, a further contract was made between the claimant and the State, by which the claimant undertook to furnish 4,267 cavalry horses and draft mules at the same price and with the same provision as to hire. These animals were furnished by the claimant and before the expiration of the period of hire covered by the contract, such animals were requisitioned by the War Department of the United States. The claimant claimed under his contract for hire at the agreed price. The claim was carefully prepared and tried before the Court of Claims by Deputy Attorney-General William E. Thorpe, and resulted in an award of \$316,278.62, which amount the State

has been compelled to pay to the claimant, Mr. A. Lawrence Smith.

After the payment of such claim I conferred with the Governor upon the subject, and with his approval and consent I entered into a contract with Messrs. King & King, attorneys, of Washington, D. C., whereby I employed that firm to prepare and file a claim against the United States in the Court of Claims of the United States at Washington, for the amount for which the State had been held liable. This contract is now in full force and effect, the claim has been prepared and filed and will, it is hoped, be reached for trial early in the year 1919. A copy of the contract, bearing the approval of the Governor, is on file in this office.

Dated December 31, 1918.

MERTON E. LEWIS,
Attorney-General.

THE FOLLOWING PAGES CONTAIN A COMPLETE
LIST OF ALL DEPUTIES AND EMPLOYEES DUR-
ING THE YEAR 1918, WITH THE AMOUNT OF
COMPENSATION PAID TO EACH PERSON NAMED
THEREIN

ADMINISTRATION — ALBANY OFFICE

Attorney-General, Merton E. Lewis.....	\$10,000 00	
First Deputy, Sanford W. Smith (to March 5, 1918).....	1,666 66	
First Deputy, Harold J. Hinman.....	\$6,333 34	
(As Third Deputy).....	1,250 00	
	<hr/>	7,583 34
Second Deputy, George A. Fisher.....	6,000 00	
Third Deputy, Edmund H. Lewis.....	\$3,000 00	
(As Deputy).....	1,145 83	
(Military payroll).....	875 00	
	<hr/>	5,020 83
Third Deputy George L. Meade.....	1,750 00	
Deputy, Edward J. Mone.....	6,000 00	
Deputy, Wilber W. Chambers.....	6,000 00	
Deputy, E. Clarence Aiken.....	6,000 00	
Deputy, Claude T. Dawes.....	6,000 00	
Deputy, Edward A. Gifford.....	5,000 00	
Deputy, Arthur E. Rose.....	5,000 00	
Deputy, Edward G. Griffin.....	\$2,800 00	
(Military payroll).....	1,044 67	
	<hr/>	3,844 67
Deputy, James S. Y. Ivins.....	4,750 00	
Deputy, Henry C. Henderson.....	5,000 00	
Deputy, B. Coe Turner.....	4,750 00	
Deputy, Glenn A. Frank.....	4,158 33	
Deputy, Alex. T. Selkirk.....	4,100 00	
Deputy, Israel Belanger	3,000 00	
Deputy, Roscoe S. Conkling.....	\$333 33	
(Military payroll).....	750 00	
	<hr/>	1,083 33
Deputy, Orlo J. MacDougall.....	1,333 33	
Deputy, Charles A. Clark.....	3,675 00	
Private Secretary, Louis W. Gett (10 months)....	2,375 00	
Stenographer to Attorney-General, Beatrice M. Turner.....	1,650 00	
Librarian, Arthur J. Smith.....	2,000 00	
	<hr/>	\$107,740 49

FINANCIAL BUREAU

Deputy and Investigator of Claims, M. Vincent Ryan.....	\$4,350 00	
Audit Clerk, Edward J. Grogan.....	2,790 00	
Stenographer, Lillian Cramer.....	1,387 50	
	<hr/>	\$8,527 50

LAND BUREAU

Chief, Edward H. Leggett.....	\$4,125 00	.
Land and Opinion Clerk, William J. Conway.....	3,100 00	
	<hr/>	7,225 00

AGRICULTURAL BUREAU

Deputy Charles M. Stern.....	\$4,437 50	
Stenographer, Edith C. Hume.....	1,260 00	
	<hr/>	5,697 50

HOSPITAL BUREAU

Deputy, James A. Burnham, Jr.....	\$3,000 00	
Financial Clerk, Anna C. Quenan.....	1,500 00	
Stenographer, Ruth F. Boyne.....	\$902 14	
(Chap. 556).....	11 25	
	<hr/>	913 39
Stenographer, Gertrude H. Berns.....	479 00	
Special Deputy, Gordon G. Harris.....	3,000 00	
	<hr/>	8,892 39

BUFFALO OFFICE

Special Deputy, E. Lyman Tilden.....	3,000 00
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RECORD BUREAU

Stenographer and Record Clerk, Anna L. O'Connell.	\$2,500 00	
Assistant to Record Clerk, Laura T. Oliver.....	1,600 00	
	<hr/>	4,100 00

STENOGRAPHIC BUREAU

Hearing Stenographer, William M. Thomas.....	\$3,000 00	
Stenographer, Anna E. Burke.....	1,500 00	
Stenographer, Katherine V. Kelley.....	1,440 00	
Stenographer, E. Fredith Garbrance.....	1,260 00	
Stenographer, Irene Fleming	1,387 50	
Stenographer, Elizabeth T. Buckley.....	1,260 00	
Stenographer, Helen L. Brett.....	1,260 00	
Stenographer, A. Louise Van Valken-		
burgh.....	\$1,135 48	
(Chap. 556).....	60 00	
	<hr/>	1,195 48
Stenographer, Minerva E. Broughton..	\$1,120 00	
(Chap. 556).....	60 00	
	<hr/>	1,180 00

Stenographer, Rita A. Galaise (to April 20, 1918) .	\$310 00	
Stenographer, Cora M. Rice.....	\$940 00	
(Chap. 556).....	7 50	
	<hr/>	947 50
Stenographer, Adelaide B. Clarke.....	\$883 39	
(Chap. 556).....	30 00	
	<hr/>	913 39
Stenographer, Margaret S. Adams.....	\$500 00	
(Chap. 556).....	30 00	
	<hr/>	530 00
	<hr/>	\$16,183 87

CLERICAL AND MESSENGER

Confidential Messenger, Emory P. Jones (Military payroll).....	\$1,038 60	
Confidential Messenger, John W. Thompson.....	\$750 00	
(As Laborer).....	295 71	
	<hr/>	1,045 71
Confidential Messenger, Seth G. Widener (to July 1, 1918).....	750 00	
Messenger, William Bernheimer.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	1,260 00
Clerk, Agnes C. Fitzgerald.....	666 00	
Telephone Operator, Josephine M. Quinn.	\$1,120 00	
(Chap. 556).....	16 00	
	<hr/>	1,136 00
Relief Telephone Operator, Gertrude M. Shea.....	\$990 00	
(Chap. 556).....	18 00	
	<hr/>	1,008 00
Laborer, Arthur E. Laudenslager.....	328 88	
Laborer, John W. Guzzetta.....	\$210 00	
(Chap. 556).....	21 00	
	<hr/>	231 00
Laborer, Emanuel Wenger	\$720 00	
(Chap. 556).....	36 00	
	<hr/>	756 00
Laborer, Roy T. Hackett.....	\$120 00	
(Chap. 556).....	12 00	
	<hr/>	132 00
Laborer, Joseph J. Mailloux.....	\$560 00	
(Chap. 556).....	20 00	
	<hr/>	580 00
	<hr/>	\$8,932 19

CONSERVATION BUREAU

Deputy, A. Frank Jenks.....	\$6,000 00	
Assistant Deputy, William T. Moore.....	4,500 00	
Assistant Deputy, Blaine F. Sturgis.....	4,000 00	
Assistant Deputy, T. Paul McGannon.....	3,500 00	
Examiner of Titles, Burton H. Loucks.....	4,000 00	
Attorney, John O. Bates.....	2,750 00	
Secretary-Stenographer, Tillie I. Beards-		
ley.	\$1,350 00	
(Chap. 556).	67 50	
	<hr/>	1,417 50
Stenographer, Lillian Chase	1,800 00	
Stenographer, Kathryn M. Pitts.....	1,260 00	
	<hr/>	\$29,227 50

COURT OF CLAIMS BUREAU

Deputy in Charge, Carey P. Davie.....	\$6,000 00	
Deputy, George L. Meade (Third Deputy from Sep-		
tember 1st to December 15th).....	4,000 00	
Deputy, Henry P. Nevins.....	5,000 00	
Deputy, Edward Myers Brown.....	4,100 00	
Deputy, James Gibson, Jr.....	5,000 00	
Deputy, Frank K. Cook.....	5,000 00	
Deputy, William E. Thorpe.....	5,645 83	
Deputy, John H. Clogston.....	5,000 00	
Deputy, Alexander Otis	1,916 86	
Deputy, Archie C. Ryder.....	5,000 00	
Deputy, James T. Cross (to March 8, 1918).....	790 33	
Deputy, Frank B. Valentine.....	4,200 00	
Deputy, Michael H. Quirk.....	4,750 00	
Deputy, Harry W. Ehle.....	4,200 00	
Deputy, Clarence L. Crabb.....	858 34	
Deputy, Burr W. Mosher.....	1,400 00	
Deputy, William Rooney	1,225 00	
Deputy, George I. Sleicher.....	3,800 00	
Stenographer, Charles E. Glynn.....	2,125 00	
Confidential Clerk, Margaret E. Templeton.....	1,725 00	
Stenographer, Katharine M. Tobin.....	936 67	
Stenographer, Loretta Loughlin	1,387 50	
	<hr/>	74,060 33

TITLE BUREAU

Deputy in Charge, Anson Getman.....	\$5,750 00	
Deputy, Title Bureau, Patrick H. Clune (Military		
payroll).	1,375 03	
Deputy, Title Bureau, John D. Monroe.....	3,450 00	
Deputy, Title Bureau, Clarence R. Cummings.....	3,139 58	
Deputy, Title Bureau, Eric J. Lake.....	3,450 00	
Deputy, Title Bureau, Delano E. Farr.....	3,150 00	
Deputy, Title Bureau, Michael F. O'Connor.....	3,075 00	

Examiner of Titles, Eugene E. Howe.....	\$3,520 83	
Examiner of Titles, Archie C. Taylor.....	2,000 00	
Examiner of Titles, Arthur W. Orvis.....	2,000 00	
Examiner of Titles, Marshall P. Howard.....	3,000 00	
Examiner of Titles, Dennis G. Kavanagh.....	2,875 00	
Examiner of Titles, Henry D. Warren.....	2,864 58	
Examiner of Titles, James A. Davidson.....	2,864 58	
Examiner of Titles, William H. Kent.....	2,625 00	
Examiner of Titles, Henry E. Warner.....	2,875 00	
Examiner of Titles, Elijah L. Roake.....	2,625 00	
Examiner of Title, Searches and Maps, Herbert J. Feehan.	2,864 58	
Examiner of Titles, David B. Kinne.....	2,500 00	
Examiner of Titles, Henry H. Cameron.....	2,625 00	
Examiner of Titles, Irving S. Carmer.....	2,625 00	
Examiner of Titles, Lewis D. McLoud.....	2,500 00	
Stenographer, Florence J. Schilling.....	1,260 00	
Stenographer, Olive E. Jones.....	\$1,085 00	
(Chap. 556).....	60 00	
	<hr/>	1,145 00
Stenographer, Rose G. McCann.....	\$1,050 00	
(Chap. 556).....	60 00	
	<hr/>	1,110 00
	<hr/>	\$67,269 18

NEW YORK CITY BUREAU

Deputy in Charge, Alfred L. Becker.....	\$8,000 00	
Deputy, Robert S. Conklin.....	5,000 00	
Deputy, William J. Smith.....	4,000 00	
Deputy, Robert P. Beyer.....	4,000 00	
Deputy, Charles S. Amsel.....	2,166 67	
Deputy, Charles Prescott Robinson.....	4,000 00	
Deputy, Samuel A. Berger.....	4,000 00	
Law Clerk, Alfred W. Jones.....	1,650 00	
Special Investigator, Andrew Johnson.....	1,500 00	
Process Server, David A. Simpson (deceased).....	1,333 33	
Process Server, Abraham J. Lifshitz.....	1,625 00	
Process Server, Benjamin Simon.....	1,625 00	
Process Server, Henry Unterweiser.....	\$895 83	
(Military payroll).....	579 15	
	<hr/>	1,474 98
Stenographer, Marie D. Farrell.....	1,500 00	
Stenographer, Charles A. Gett.....	1,500 00	
Stenographer, Sadie Bellion.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	1,260 00
Stenographer, Mollie Hornstein.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	1,260 00

Stenographer, Blanche R. Heflich.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	\$1,260 00
Stenographer, Yetta E. Sheer.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	1,260 00
Stenographer, Frances M. O'Connor.....		600 00
Messenger, Joseph Solomon.....	\$1,200 00	
(Chap. 556).....	60 00	
	<hr/>	1,260 00
Telephone Operator, Grace M. Banta.....		1,020 00
Laborer, Henry Straus	\$900 00	
(Chap. 556).....	40 00	
	<hr/>	940 00
	<hr/>	<hr/>
		\$52,239 98

TEMPORARY EMPLOYMENTS

Charles B. Templeton, Jr.....	\$674 29	
Margaret Reedy	80 65	
Catherine M. McKenna.....	195 97	
Alma C. Christensen.....	211 13	
	<hr/>	1,162 04

Total.....		\$394,257 97
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Attorney-General's Appropriation, General Fund.....	\$293,285 74
Trustees of Public Buildings, General Fund.....	510 41
State Forest Preserve Fund.....	18,893 13
Canal Fund	74,476 98
Military payroll	6,154 56
Chapter 556, Laws of 1918 (10 per cent. increase).....	937 15
	<hr/>
	<hr/>
	\$394,257 97

BALANCE SHEET

GENERAL FUND

Jan. 1. Appropriation balance	\$252,679 31
Appropriations, 1918	413,434 32
	<hr/>
	\$666,113 63
	<hr/>
Expenditures.	\$405,581 09
Appropriations lapsed	19,134 39
Dec. 31. Appropriation balance	241,398 15
	<hr/>
	<hr/>
	\$666,113 63

OPERATING EXPENSES

Personal Service	\$394,257 97
Maintenance and Operation.....	123,423 28
	<hr/>
	\$517,681 25
	<hr/>

ANALYSIS OF EXPENDITURES

General Fund (Attorney-General)	\$405,581 09
General Fund (Trustees of Public Buildings)	1,962 33
Canal Fund	84,042 75
State Forest Preserve Fund.....	26,095 08
	<hr/>
	\$517,681 25
	<hr/>

RECEIPTS AND COLLECTIONS FOR YEAR ENDING DECEMBER 31, 1918

Agricultural Bureau	\$40,995 07
Conservation Bureau	7,379 81
Hospital Bureau:	
Costs and disbursements.....	\$5,685 71
Maintenance.	144,034 99
	<hr/>
	149,720 70
Miscellaneous receipts (see detail)	81,857 22
	<hr/>
	\$279,952 80
	<hr/>

DETAIL OF MISCELLANEOUS RECEIPTS

Corporation Taxes	\$7,357 07
Mortgage Tax	6,913 90
Transfer Tax	1,605 71
U. S. Deposit Fund Mortgages (Interest)	677 38
Premiums State Insurance Fund.....	5,745 22
Estates of Decedents	22,525 03
Penalties, violations Health Laws.....	825 00
Penalties, violations Pharmacy Law.....	264 88
Penalties, Illegal Practice of Dentistry.....	50 00
Settlements, Highway Actions.....	26,375 17
Settlements, other actions.....	2,516 25
Sale of old equipment.....	10 00
Fees collected	22 69
Costs in actions and proceedings.....	6,968 92
	<hr/>
	\$81,857 22
	<hr/>

STATE OF NEW YORK — COURT OF CLAIMS

Number of claims disposed of during 1918.....	728
Amount claimed	\$42,124,587 95
Amount awarded	1,898,550 69
Amount claimed in claims in which awards were made.....	9,879,941 36
Number of claims dismissed.....	206

The following are the claims in which final disposition has been made by the court during 1918:

No.	Name of Claimant	Amount claimed	Amount awarded
2344-A	Ackerman, William A.....	\$252 50	\$150 00
15211	Acme Eng. & Cont. Company.....	597,192 56	125,000 00
15600	Acme Eng. & Cont. Company.....	12,246 41	Dismissed
15237	Aikenhead Company, Clarence.....	25,845 72	9,850 00
1519-A	Akehurst, Ella J.....	230 35	184 00
2276-A	Akehurst, Ella J.....	196 00	156 00
2307-A	Akehurst, Ella J.....	67 00	47 00
2318-A	Akehurst, Ella J.....	32 00	32 00
15028	Albaugh, Anna T. Van Slyck, and ano..	500 00	Dismissed
2961	Allen, Arch	297 50	142 49
15526 }	Alto Construction Co. and ano.....	{ 525,555 09 }	130,000 00
15527 }			
		{ 5,712 77 }	
323-A	American Ice Company, The.....	393 20	225 00
2048-A	Amo, George P.....	185 00	130 00
2653-A	Anderson, James	50,377 41	69,540 20
13905	Andres, Addie M.....	175 00	20 00
13826	Angermire, Henry, and ano.....	2,100 00	Dismissed
2963	Archer, Willard	148 75	142 49
2962	Angus, Loren W.....	297 50	142 49
2599-A	Armstrong, W. B. Company.....	1,895 60	1,685 06
2960	Arthur, Dwight	\$297 50	\$142 49
14923	Ashby, Mary E.....	213 42	Dismissed
14924	Ashby, May E., and ano.....	375 00	Dismissed
13850	Ashman, George H.....	284 50	75 00
14938	Atlanta Construction Co., The.....	7,293 96	7,293 96
14962	Atlanta Construction Co., The.....	3,951 99	3,951 99
15533	Atlanta Construction Co., The.....	1,526 43	1,526 43
14494	Atwood, Harriet L.....	3,000 00	Dismissed
15491	Auchempaugh, Ruby S.....	13,734 50	1,000 00
14035	Austin, William B.....	116 00	79 00
1518-A	Avery, James B.....	41 50	41 50
2386-A	Avery, James B., and ano.....	35 03	35 03
2966	Babcock, E. H.....	42 50	Dismissed
14954	Bach, Peter F.....	400 00	Dismissed
2448-A	Bacon, Mary J., et al.....	473 00	235 00
2366-A	Bagg, Egbert	243 92	118 00

REPORT OF THE ATTORNEY-GENERAL

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No.	Name of Claimant	Amount claimed	Amount awarded
294-A	Baker, Russell	\$211 00	\$125 00
8678	Balch, Walter H.	142 00	Dismissed
2308-A	Baldwin, Henrietta S.	71 60	71 60
14990	Barclay, William W.	2,155 00	Dismissed
15290	Barrie, Augustus, and ano.	1,500 00	300 00
2965	Barry, Andrew	297 50	142 49
8980	Bartholomew, David B.	826 00	Dismissed
15184	Basso, Gelsomina	500 00	265 00
14605	Bastian, Daniel	325 00	Dismissed
15301	Baton, George	58 00	40 00
1174-A	Battle Island Paper Co.	1,827,500 00	149,350 00
3804	Baumann, Walter K. P., as exec., etc..	14,210 00	Dismissed
1522-A	Beal, Helen C.	39 20	39 00
2345-A	Beal, Helen C.	102 50	90 00
14753	Becker, Mary E.	200 00	15 00
14977	Benson, Jane	25 00	Dismissed
15299	Benson, Jane	25 00	25 00
14022	Berger, Liza	1,162 50	450 00
14023	Berger, Liza	3,500 00	200 00
14901	Bianco, Giovanni	9,906 50	319 50
14902	Bianco, Giovanni	4,304 00	76 00
14106	Bingham, Charlotte A.	27,500 00	Dismissed
13849	Birch, Sylvanus	650 00	149 00
3028	Blair, Peter	297 50	141 00
13946	Blass, James B., and ano.	400 00	130 00
14985	Bonnet, Andrew C.	277 11	Dismissed
15102	Borowski, Frances, as admx., etc....	25,000 00	Dismissed
14055	Bradt, George T.	2,332 00	150 00
14416	Bradt, Henry	2,000 00	Dismissed
15080	Brady, John J., et al.	2,300 00	750 00
14049	Brandhorst, Christian F.	361 00	225 00
1681-A	Brandt, Alfred	238 00	Dismissed
14059	Brandt, Louise	765 00	130 00
14075	Brandt, Henry	7,015 00	450 94
14040	Brockmyer, Henry	320 80	200 00
2754-A	Brooks, James G.	27,296 50	Dismissed
2668-A	Brogan, Raymond F., etc.	2,600 00	Dismissed
2591-A	Brougham, G., Marcus, adm., etc....	5,000 00	500 00
8006	Brown, Jerry, and ano.	150 00	Dismissed
8994	Brown, Jerry	202 65	125 00
14994	Brown, Charles O.	2,506 50	Dismissed
1513-A	Brown, Kate A.	18 24	18 24
2293-A	Brown, Kate A.	86 00	77 50
2319-A	Brown, Kate A.	336 00	150 00
8665	Brown, Sarah E.	850 00	75 00
2309-A	Brudo, Edward A.	71 80	35 00
1149-A	Bryan, Benjamin B., et al.	1,601 04	Dismissed
15503	Buell & McDonald.	2,083 40	1,500 00

No.	Name of Claimant	Amount claimed	Amount awarded
2007-A	Buffalo Dredging Co.....	\$56,757 82	Dismissed
2068-A	Buffalo Dredging Co.....	61,072 20	Dismissed
10459	Buffalo, Lockport & Rochester Ry. Co.	2,550 00	Dismissed
10114	Buhrmaster, Frederick	175 00	\$175 00
2292-A	Burke, William	193 20	130 00
2346-A	Burkhart, Mabel L.....	290 28	200 00
1791-A	Burmester, Ray	6,000 00	Dismissed
14025	Burns, Harry F.....	495 00	175 00
8982	Butler, John M.....	750 75	Dismissed
9157	Butterfield, Fred R., as executor.....	600 00	300 00
9162	Butterfield, Fred R., ind., etc.....	1,680 00	785 00
940-A	Butterfield, Fred R.....	1,281 00	1,050 00
2967	Byres, Frederick	148 75	Dismissed
14953	Byrnes, Michael	1,845 00	Dismissed
1514-A	Cagwin, Nettie L.....	56 00	50 00
2277-A	Cagwin, Nettie L.....	194 00	125 00
9160	Cahill, Daniel	600 00	300 00
14903	Califano, John, and ano.....	6,363 92	249 50
15230	Canty, Michael	450 00	Dismissed
1520-A	Capron, Mary H.....	158 00	130 00
2294-A	Capron, Mary H.....	185 50	110 00
14048	Cartwright, William	513 00	225 00
14045	Carver, George K.....	1,673 00	537 50
6611	Cary, Thomas H.....	1,037 00	Dismissed
9262	Cassada, Frances B.....	3,000 00	Dismissed
15135	Casey, Ambrose	1,000 00	Dismissed
2968	Cassady, Abram	297 50	142 49
15517	Central Building Company.....	24,824 22	23,059 58
15112}	Central Dredging Company.....	244,932 54}	44,687 09
15113}		30,357 40}	
2369-A	Chapin, Dwight	160 80	120 00
2310-A	Chapin, Samuel	77 65	50 00
8010	Charles, Mary Quick	600 00	Dismissed
1515-A	Chisholm, James	137 50	100 00
2278-A	Chisholm, James	400 00	200 00
15115	Chriss, Lelah M.....	5,000 00	Dismissed
2970	Clancy, Michael	297 50	142 49
2557-A	Clark Bros. Quarry Company.....	2,566 00	1,866 00
14118	Clark Bros. Quarry Company.....	928 00	719 00
2971	Clemens, Isaac	265 60	Dismissed
355-A	Clifton Park, Town of.....	25,000 00	250 00
2402-A	Clock, Percy E.....	250 91	75 00
295-A	Clute, James S.....	670 00	325 00
15507	Clute, Josephine M.....	1,520 00	375 00
1517-A	Cody, James F.....	153 75	97 50
2311-A	Cody, James F.....	465 00	85 00
14979	Cogan, Lester	25 00	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
15295	Cogan, Lester	\$25 00	\$25 00
3033	Cogovan, Patrick	148 75	141 66
14036	Cohan, Catharin M., as adm., etc.....	179 00	138 00
3030	Cole, Henry	148 75	Dismissed
15320	Cole, Sadie A.....	4,613 50	225 00
15281	Collier, Paul	589 80	Dismissed
15244	Collins, Daniel, et al.....	2,050 00	500 00
15105	Collins, Edward	1,800 00	420 00
14209	Collins, Eugene C.....	3,600 00	58 75
1048-A	Collona, Frank	20,000 00	2,850 00
14830	Comella, Philip F	428 72	Dismissed
1725-A	Commonwealth Weekly Pub. Co.....	1,302 30	Dismissed
14165	Conley, William D., and ano.....	3,400 00	Dismissed
14003	Connors, Patrick, estate of.....	1,000 00	150 00
1777-A	Consolidated Water Co. of Utica, N. Y.	10,000,000 00	Dismissed
2799-A	Consolidated Water Co. of Utica, N. Y.	10,000,000 00	Dismissed
14389	Consolidated Water Co. of Utica, N. Y.	10,000,000 00	Dismissed
15150	Cooper, Charles H.....	955 87	Dismissed
15300	Corbett, John	100 00	50 00
15121	Corlew, George, adm., etc.....	10,000 00	Dismissed
14063	Craft, Mary	2,285 50	335 00
1566-A	Crandall, Minnie F., et al.....	12,000 00	1,100 00
2989	Crawford, John J.....	148 75	141 66
2565-A	Crisp, Edith M., by Guardian.....	10,085 00	1,520 20
670-A	Cross, James H.....	20,000 00	3,000 00
671-A	Cross, James H.....	10,000 00	2,000 00
733-A	Cross, James H.....	250,000 00	17,500 00
2969	Crouse, Alvin	148 75	142 49
3034	Cuddy, Martin	61 25	Dismissed
14905	Cuomo, Anthony	319 55	186 90
14906	Cuomo, Ciro, and ano.....	2,190 00	104 00
14907	Cuomo, Ciro	3,999 69	272 00
14908	Cuomo, Louisa	8,199 00	606 68
14945	Dair, Martin J.....	192 09	Dismissed
3038	Dairharst, Frank	255 00	100 09
14704	Daly, James C.....	800 00	Dismissed
2975	Davin, Charles	297 50	142 14
2973	Davin, S. M.....	297 50	142 49
2972	Davison, Marshall	297 50	142 49
15240	Day, George W., an infant, etc.....	5,000 00	Dismissed
13993	Day, Winterton, J.....	6,992 25	475 00
10572	Decicco, Michael	5,455 36	3,023 06
14152	Defiance Corporation, The.....	289 36	258 32
3036	DeGraff, Jay	148 75	142 49
3031	DeKater, William	297 50	142 49
537-A	Delaney, John.....	500 00	500 00
13969	Delaware & Hudson Co., The.....	15,493 16	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
13970	Delaware & Hudson Co., The.....	\$74,737 68	Dismissed
14909	Dell'Orfano, Biogio	7,635 00	\$225 00
14910	Dell'Orfano, Filomena	329 59	230 25
2974	Dengler, George F.....	148 75	Dismissed
14404	Des Frances, Yvan Marie Albert, et al.	200 00	180 00
14219	Detsel, Frank L.....	69 50	15 00
15497	Devendorf, Porter	2,100 00	275 00
2312-A	Devereux, Thomas A.....	240 00	150 00
2724-A	Devilbiss, Lydia Allen	500 00	500 00
14967	Dexter & Carpenter, Inc.....	784 80	744 36
2320-A	Dickinson, John J.....	800 00	200 00
14911	Di Donna, Marietta.....	7,044 84	210 84
14038	Diggins, John	162 00	125 00
14558	Dillon, Martin F.....	200 00	Dismissed
15114	Di Nardi, Orlando.....	483 70	Dismissed
15146	Dobson, Rufus	1,750 00	400 00
3037	Doory, Michael	122 50	58 58
1565-A	Dotter, S., Estate Company.....	17,000 00	1,800 00
2403-A	Downing, Carl R.....	367 58	225 00
2349-A	Downing, Roswell B.....	309 80	175 00
14971	Drummond, Emmagene	500 00	233 33
2745-A	Dudden, Florence	5,000 00	Dismissed
2746-A	Dudden, William	2,000 00	Dismissed
15212	Dudley Bros. & Co.....	1,136 40	1,136 40
3035	Duffy, John	61 75	58 58
15296	Duffy, Terrance	252 40	75 00
14156	Dugan, John P., Co.....	1,390 00	1,390 00
15279	Dunham, George E.....	135 00	Dismissed
15280	Dunham, George E., and ano.....	450 00	Dismissed
15564	Durkin, Marjorie	500 00	100 00
9159	Dutcher, Albert S.....	314 00	157 00
9111	Eddy Valve Company.....	61,609 83	Dismissed
14265	Eddy Valve Company.....	500 00	Dismissed
1951-A	Edwards, H. Maria, Mrs.....	2,117 75	450 00
14102	Eldridge, Louise F. L.....	4,218 75	300 00
13899	Ellis, Elias	300 00	85 00
38-A	Empire Engineering Corp.....	671,074 97	Dismissed
15093	Empire Sand Company.....	6,749 05	1,618 00
875-A	Empire United Railways, Inc.....	1,339 37	Dismissed
15214	Evans, Robert J., and ano.....	67,500 00	Dismissed
1551-A	Everts, Eva D.....	3,350 00	800 00
2976	Eyshman, Alonzo	297 50	142 49
2978	Eysman, Frank	148 75	142 49
2977	Eysman, Luther	297 50	142 49
14014	Faber, Harry	201 75	62 50
14015	Faber, Harry	10,000 00	450 00
14024	Fabrey, Alexander C.....	438 50	200 00
14030	Fabrey, Margaret C.....	4,800 00	225 00

No.	Name of Claimant	Amount claimed	Amount awarded
15298	Fagan, James, as adm., etc.....	\$72 50	\$50 00
14026	Fancher, Ruth	3,500 00	175 00
14027	Fancher, Ruth	335 50	125 00
3041	Farrell, Earl	122 50	58 58
1193-A	Federal Telephone & Telegraph Co....	235 78	144 08
15155	Fischette, Thomas, and ano.....	490 00	275 00
2988	Fisher, Malvin	297 50	142 49
14109	Fisher, Willis G.....	7,124 00	5,500 00
2986	Fitzgerald, John, Jr.....	297 50	142 49
2990	Foley, Reuben	297 50	142 49
15076	Folts, Jennie G., and ano.....	400 00	Dismissed
2989	Foltz, C. P.....	148 75	Dismissed
3305	Fonda, Jacob A.....	1,359 04	Dismissed
2757-A }			
14295 }	Ford, Albert H.....	21,594 40	14,465 33
14677 }			
297-A	Ford, William T.....	904 90	650 00
298-A	Ford, William T., and ano.....	931 60	650 00
299-A	Fort, Rachel E., and ano.....	487 05	300 00
2987	Fox, Alexander	297 50	142 49
3039	Francisco, Edies	297 50	141 66
14031	Frankel, Marks	600 00	225 00
14032	Frankel, Marks	9,000 00	450 00
14033	Frankenhauser, Albert	3,500 00	200 00
15538	Freson, Michael	190 00	100 00
14463	Frisbie and Stansfield Knitting Co., Inc.	11,893 30	Dismissed
8993	Fuller, Leonard B.....	130 00	Dismissed
2244-A	Fulton Light, Heat & Power Co.....	70,000 00	1,500 00
3040	Furey, Peter	122 50	58 58
13991	Gallup, Percy, and ano.....	2,103 23	400 00
14020	Ganberg, Mary	304 58	100 00
2351-A	Garvin, Anthony T.....	405 00	260 00
2031-A	General Construction Co. et al.....	28,508 44	11,149 44
10205 }		101,853 16	
10206 }	Gilbert, J. Judson, et al.....	25,948 55	
2820-A }		132,966 57	35,000 00
2821-A }		37,948 55	
15285	Gleason, Fred	1,085 34	1,085 00
14948	Glindmeyer, Ferdinand	300 00	32 00
15090	Glindmyer, Louisa, et al.....	14,677 00	533 40
3122	Goggins, James F.....	412 50	Dismissed
15498	Goldburgh, Marcus M.....	1,266 60	300 00
2991	Goodbread, Jerome	148 75	Dismissed
2321-A	Goodrich, Rebecca	90 00	50 00
14965	Goulds Manufacturing Co., The.....	10,000 00	Dismissed
15141	Graham, A. M., Coal Co.....	400 00	100 00
2467-A	Great Lakes Construction Co.....	264,852 81	51,378 14

No.	Name of Claimant	Amount claimed	Amount awarded
1804-A	Green, Adelbert	\$14,000 00	\$3,650 00
14085	Gregorie, Sophia	1,922 00	275 00
2670-A	Griffin, Daniel S., et al.....	10,000 00	Dismissed
14974	Grimes, Bessie	10,000 00	Dismissed
3427	Groom, George	137 52	Dismissed
14192	Gsanger, Paul	990 00	990 00
15220	Gutekunst, Christian	5,000 00	650 00
300-A	Guyer, Smith	142 50	110 00
14678	Hagaman, Theodore C., and ano.....	3,963 39	3,449 13
14679	Hagaman, Theodore C., et al.....	1,640 69	1,381 01
14550	Haight, Edward L. and ano.....	5,700 00	1,800 00
14858	Hairs, Alois	484 75	190 00
15605	Hairs, Alois	624 00	90 00
301-A	Hall, Roland	715 00	450 00
13904	Hamilton, James A.....	180 00	65 00
2347-A	Hamlin, S. Georgia.....	150 00	80 00
2348-A	Hamlin, S. Georgia.....	103 00	20 00
9149	Hanrahan, John	275 00	110 00
9154	Hanrahan, John F.....	675 00	337 50
15168	Harde, Bonner & Company.....	1,048 90	1,048 90
15171	Harper, Fanny	10,000 00	Dismissed
15172	Harper, Samuel	2,300 00	Dismissed
14666	Harriman & Co.....	1,207 61	1,207 61
14067	Harrod, Caroline	686 50	135 00
881-A	Hart, Charles E.....	4,902 00	950 00
9473	Hart, Elwin E.....	1,001 62	Dismissed
2322-A	Hart, Roscoe	327 50	125 00
2997	Harter, Aaron A.....	262 50	122 69
15535	Harvey, St. George.....	585 60	585 60
14947	Haselo, John W., et al.....	1,000 00	472 13
15091	Haselo, John W., et al.....	18,260 00	452 00
15092	Haselo, John W., et al.....	49,380 00	8,616 80
2993	Hastings, Thomas	148 75	142 49
15213	Hayes, John L., Const. Co.....	86,910 60	Dismissed
15510	Heit, Ezra, et al.....	2,200 00	500 00
15511	Heit, Ezra, et al.....	3,200 00	750 00
15492	Heitkamp, Henry	1,014 50	275 00
14223	Henderson & Company.....	25 00	15 00
2994	Hennessey, John	297 50	142 49
14437	Henrick, John, and ano.....	10,000 00	Dismissed
14474	Hess, Clarence D.....	1,980 00	Dismissed
14475	Hess, Clarence D., and ano.....	1,500 00	28 00
14981	Hiler, Dora W., and ano.....	200 00	50 00
9956	Hill, Walton	148 75	141 66
2995	Hilliger, Douglas	148 75	Dismissed
1536-A	Hinckley Construction Co.....	2,724 94	Dismissed
14715	Hirzel, Albert C., and ano.....	2,310 00	11 00
14714	Hirzel, Albert C., et al.....	2,310 00	11 00

No.	Name of Claimant	Amount claimed	Amount awarded
15185	Hoffman, Andrew	\$695 00	\$50 00
15369	Hoffman, Andrew	475 00	Dismissed
3123	Hogan, Michael	195 62	Dismissed
302-A	Holbrook, William	150 00	100 00
14151	Holden, Amos F.	25,010 00	Dismissed
14604 } 15147 }	Holington Company, The.....	14,367 77 } 16,071 44 }	11,570 24
15175	Hollister & Babcock	375 50	375 50
13829	Hooper, Julia A., and ano.....	3,150 00	Dismissed
14783	Hooper, Julia A., and ano.....	3,350 00	Dismissed
13897	Hopkins, Richard	907 62	707 62
15382	Horan, Madeline, an Infant, etc.....	10,000 00	Dismissed
14037	Horstman, Fred	70 00	50 00
13776	Houck, John J.	1,295 00	Dismissed
15599	Howard, William G.	482 50	482 50
14784	Houck, John J.	1,295 00	Dismissed
14997	Hoyt, A. Eugene.....	350 00	Dismissed
2996	Hulling, Augustus	297 50	142 49
14653	Hume, Henry M., & Co.....	115 50	Dismissed
15129	Huntley, Chauncey W.	250 00	35 00
14976	Independent Brewing Company.....	10,000 00	2,000 00
13859	Ingalls, Charles W.	1,660 60	249 09
13860	Ingalls, Charles W.	2,306 00	Dismissed
421-A	Ireland, John De C., et al.....	10,000 00	Dismissed
14970	James, Nelson	900 00	Dismissed
674-A	Johnson, Charles A.	200 00	Dismissed
675-A	Johnson, Charles A., and ano.....	324 00	Dismissed
8674	Johnson, Frank	525 00	50 00
9643	Johnson, George F.	2,398 00	Dismissed
9644	Johnson, George F.	2,524 64	Dismissed
14672	Johnson, Gertrude	25,000 00	8,390 00
8984	Johnson, Jane B.	200 00	Dismissed
2998	Johnson, M.	289 35	142 14
3124	Johnson, Thomas	253 12	Dismissed
14694	Jones, David R.	2,000 00	Dismissed
13994	Jones, Satie L.	500 00	100 00
8863	Juckett, Byron D.	581 90	Dismissed
1511-A	Kearns, Margaret A.	27 50	27 50
1516-A	Kearns, Margaret A.	81 50	65 50
2279-A	Kearns, Margaret A.	255 00	185 00
2280-A	Kearns, Margaret A.	101 00	60 00
14996	Keefe, Daniel I.	12,035 00	8,000 00
14041	Kelle, Fredericka W.	363 00	200 00
948-A	Kelleher, Michael, and ano.....	4,028 60	2,271 45
2999	Keller, Jasper	297 50	142 49
3000	Keller, William	297 50	142 49
3043	Keller, William S.	297 50	141 66
3042	Kelly, Daniel T.	61 25	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
14034	Kelly, Delia M.....	\$1,503 00	\$325 00
13779	Kelly, John F.....	10,000 00	600 00
3044	Kelly, John, Jr.....	262 50	125 54
2371-A	Kenfield, Aristeen	415 00	125 50
14898	Kennedy, Jos. P., and ano.....	5,625 00	350 00
718-A	Kerbaugh, H. S., Inc. (Bellwood Eng. Co., Inc.)	587,662 45	34,052 59
1190-A			
1191-A			
1192-A			
1955-A			
2051-A			
2393-A			
13840	Kerwin Construction Co.....	10,191 79	10,191 79
14222	Ketchum, Charles P.....	200 00	75 00
14943	Kilborne, A. W., & Co.....	241 13	241 13
9422	Kincaid, Mary A., as exec., etc.....	1,100 00	550 00
15003	King, Michael	1,740 00	Dismissed
14488	Kingsbury Construction Co.....	9,863 55	1,733 61
8812	Kinner, Julia	200 00	Dismissed
15117	Kliegl, Anton T. and ano., etc.....	770 10	385 00
14018	Kohar, Edward	4,000 00	150 00
14019	Kohar, Joseph	422 70	100 00
3428	Kruesi, Charles	137 52	Dismissed
2025-A	Kyser, Jacob	943 25	475 00
2024-A	Kyser, J. Carlotta.....	1,229 00	450 00
13777	Lambert, Terrence	4,375 00	Dismissed
15219	Lanahan, Daniel	2,106 25	200 00
142-A	Lane, Thomas H.	223 25	115 00
14044	Lange, August	549 00	210 00
14042	Lange, Henry C.	531 00	289 00
15232	Lannan, James	470 00	60 00
2651-A	Lathrop, Shea & Henwood Co.....	2,881 26	2,658 00
14912	Laudis, George	6,697 50	427 00
14701	Laux, Richard C. and ano.....	266 67	Dismissed
3003	Leach, William	177 08	Dismissed
15501	Leamon, Emma	300 75	175 00
9065	Lee, Charles R., exec., etc.....	5,832 25	770 00
15596	Legge, Llewellyn	1,125 00	1,125 00
14378	Lembeck, Sarah E., Ind., etc.....	2,000 00	Dismissed
3001	Lintner, George	297 50	142 49
2469-a	Lomanto, Loreto	873 00	765 50
14267	Loomis, Frank J., et al.....	9,950 00	2,000 00
324-A	Lumbert, Jeremiah	721 30	375 00
3002	Lucy, John D.	297 50	142 49
15216	Lux Mfg. Co., The.....	1,370 86	350 00
3429	Lynch, Christopher	137 52	Dismissed
1683-A	McAuliff, Edward F.	2,273 00	Dismissed
341-A	McCarthy, Thomas J.	5,000 00	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
15118	McClure, Catharine B. J., et al.....	\$3,000 00	\$875 10
15597	McCormick, John T.....	495 00	495 00
3051	McDonnell, William	122 50	58 58
1521-A	McGrath, Stella	103 65	95 00
2295-A	McGrath, Stella A.....	140 23	120 00
3008	McGrath, Thomas	148 75	142 49
1510-A	McGrath, W. J.....	31 10	31 10
3052	McKean, Edward	297 50	141 66
3050	McKeough, Henry	61 25	55 26
3053	McNeil, Henry	297 50	141 66
14663	Mack, Hereward M. and ano.....	806 86	440 73
3005	Magar, Frank	148 75	Dismissed
3010	Maguire, William	148 70	Dismissed
3045	Mahanna, John L.....	175 00	83 69
15287	Maier, Fred & Sons, Inc.....	2,630 20	700 00
3047	Malley, James	122 50	58 58
1685-A	Malone, Thomas, Jr.....	4,315 75	Dismissed
14098	Manhattan Company, The.....	1,775 00	900 00
3048	Manifold, Joseph	70 00	58 58
2352-A	Marcellus, Bessie M.....	100 00	75 00
10250	Martin, James E.....	5,853 74	2,470 94
14047	Maslanka, Thomas	760 00	210 00
9477	Mason, Albert B.....	120 00	Dismissed
2104-A	Mastroianni, Antonio	1,174 48	225 00
9036	Matthews, Andrew	293 95	Dismissed
15506	Mattison, P. Scott and ano.....	2,011 00	225 00
15377	Maurer, Anna	300 00	45 00
3046	Maxwell, Edward	122 50	58 58
13841	Medina, Village of	10,003 00	500 00
15136	Meehan, Charles M.,.....	750 00	Dismissed
3049	Melick, Casper	122 00	58 58
14734	Mendel, Abraham	409 85	Dismissed
9152	Meneely, George, as adm., etc.....	1,360 00	680 00
13768	Merrill, Bertha C.....	15,162 00	5,162 00
13767	Merrill, William A.....	12,554 25	5,661 75
14792	Miller, James H. and ano.....	200 00	25 00
15297	Mimecci, Pietro	60 00	35 00
15060	Minnick, John	500 00	Dismissed
15319	Minton, Albert M. and ano.....	200 00	75 00
15375	Minton, Albert M. and ano.....	400 00	375 00
15059	Mongin, Frances, and ano.....	4,500 00	Dismissed
15495	Montrymowicz, Peter	7,346 50	600 00
1316-A	Moore, Sarah Beecher.....	200 00	Dismissed
1318-A	Moore, Sarah Beecher.....	300 00	Dismissed
9161	Moore, Spencer B.	1,365 00	300 00
13995	Morehouse, Friend C., and ano.....	3,859 65	884 00
13786	Morris, Morris	3,150 00	Dismissed
14702	Moschel's Jacob Sons, Inc.....	416 88	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
3004	Mosher, Fred	\$148 75	\$142.49
15242	Moss, Frank	15,000 00	Dismissed
13996	Moss, Frank A.....	1,916 25	325 25
3125	Mulcare, Michael	535 00	Dismissed
13769	Moulton, John R., etc.....	30,290 25	25,442 50
13770	Moulton, John R., etc.....	30,204 80	10,000 00
277-A	Munckton, James, et al.....	1,179 47	600 00
10536	Murphy, Charles E.....	601 02	400 00
303-A	Murray, John	413 00	150 00
1999-A	Murray, Patrick H., etc.....	153,034 00	25,000 00
14072	Muth, William	2,652 00	200 00
15041	Myers, Frances G.....	4,400 00	Dismissed
3007	Myers, Lafayette	297 50	142 49
14570	National Starch Company.....	53,000 00	17,250 00
1892-A	Nellis, Kate M., and ano.....	720 00	30 00
14692	Nellis, Kate M., and ano.....	720 00	30 00
3054	Newkirk, James	297 50	141 66
14720	Newport Construction Co.....	5,427 40	3,002 60
9874	New York Central R. R. Co., The.....	46,000 00	Dismissed
9875	New York Central & Hudson River R. R. Co.....	51,000 00	Dismissed
9878	New York Central & Hudson River R. R. Co.....	56,000 00	Dismissed
10823	New York Central & Hudson River R. R. Co.....	500 00	Dismissed
1961-A	New York Central & Hudson River R. R. Co.....	1,625 00	Dismissed
2194-A	New York Central Railroad Co., The..	2,806,560 00	581,560 00
14673	New York Central Railroad Co.....	3,000 00	Dismissed
14743	New York Central Railroad Co.....	37,429 40	36,988 88
15176	New York Central Railroad Co.....	12,135 00	Dismissed
1134-A	New York State Railways.....	4,530 00	353 00
15251	New York State Railways.....	5,020 00	1,506 00
777-A	New York Telephone Company.....	228 48	168 00
1250-A	New York Telephone Company.....	8,451 32	5,500 00
2096-A	New York Telephone Company.....	308 56	165 02
13812	New York Telephone Company.....	88 20	76 20
14149	New York Telephone Company.....	302 95	266 51
14150	New York Telephone Company.....	1,837 30	1,100 00
439-A	Niagara, Lockport & Ontario Power Co.	4,951 76	1,618 05
10177	Niagara, Lockport & Ontario Power Co.	1,390 00.	505 25
14393	Noakes, Fred J., and ano.....	2,500 00	20 00
14503}	Noeth, Cecelia V.....	{1,031 81}	3,200 00
14504}		{4,948 21}	
15223	Noon, Rose and ano.....	140 00	45 00
15505	Nuttal, Mary	1,883 00	325 00
14087	O'Brien, David H.....	2,631 50	175 00

No.	Name of Claimant	Amount claimed	Amount awarded
14899	O'Brien, James, adm., etc.....	\$25,000 00	Dismissed
15732	O'Brien, Jarvis P.....	1,811 00	\$950 00
3055	O'Connor, George	262 50	125 54
15393	Orlick, John, as exec.....	328 25	68 00
561-A	Oswego Country Club.....	5,000 00	Dismissed
1168-A	Oswego Country Club.....	13,000 00	Dismissed
14271	Oswego Country Club.....	5,000 00	Dismissed
9173	Oswego, County of.....	7,021 31	7,021 31
14261	Oswego & Syracuse Railroad Co. et al.	88,750 00	Dismissed
2400-A	Paddleford, Jesse F., and ano.....	1,802 57	Dismissed
15077	Page, David B., et al., etc.....	500 00	150 00
143-A	Paris, Charles H., and ano.....	750 00	150 00
9156	Parker, Andrew	1,500 00	750 00
9155	Parker, Terrence, as adm., etc.....	1,570 00	785 00
15130	Parsons, James W., and ano.....	500 00	200 00
1479-A	Parsons, John S., as trustee.....	33,081 51	Dismissed
14913	Pasquerillo, Laurenza	7,622 00	133 00
15116	Pathfinder Construction Co., Inc., The.	1,327 96	1,327 96
14873	Patrick, Walter	116 00	35 00
15614	Patrick, Walter	125 00	35 00
9153	Patten, Sarah J., as admx., etc.....	350 00	175 00
304-A	Pearse, James C.....	431 00	290 00
305-A	Pearse, Frank T.....	559 16	350 00
306-A	Pearse, Mary E., et al.....	489 83	250 00
10063 }			
14897 }	Peck, Duncan W.....	49,863 92	5,000 00
14366 }			
10362	Penfold, Danford J., and ano.....	5,000 00	300 00
3011	Penny, F. H.....	116 87	Dismissed
507-A	Peoples Gas & Electric Co.....	176,696 01	29,000 00
1832-A	Peoples Gas & Electric Co.....	40,000 00	4,549 32
14438	Peoples Gas & Electric Co.....	40,000 00	Dismissed
15509	Pepper, Josephine	786 00	190 00
15598	Perkins, Albert H.....	1,125 00	1,125 00
3012	Perkins, D. A.....	180 62	142 49
307-A	Perrault, Joseph	175 00	125 00
15595	Pettis, Clifford R.....	1,125 00	1,125 00
3013	Petrie, Frank	297 50	142 49
15496	Philbrook, Horace W.....	1,792 45	300 00
1050-A	Phillips, Marcus H.....	972 00	700 00
1051-A	Phillips, Marcus H.....	8,137 60	1,686 40
14296	Phillips, Marcus H.....	7,978 00	773 10
14016	Pietraszewski, Wolenty	4,000 00	250 00
14017	Pietraszewski, Wolenty	207 50	110 00
15477	Post, William, and ano.....	23,808 00	23,808 00
13868	Powell, Sarah, and ano.....	200 00	25 00
15027	Pratt, Emily R., as exec., etc.....	1,185 34	Dismissed

No.	Name of Claimant	Amount claimed	Amount awarded
14062	Pronznski, John	\$935 85	\$242 20
3057	Quackenbush, William N.....	297 50	141 66
3058	Quinn, John	148 75	Dismissed
3059	Quinn, John	61 25	58 58
3015	Rankin, Daniel	148 75	Dismissed
2314-A	Reed, Francis	56 50	20 00
326-A	Reglin, August	164 95	125 00
2372-A	Reidy, Edith T.....	84 00	64 00
1854-A	Rexford Flats Bridge Company.....	43 000 00	37,290 00
15079	Ribstein-Holter Company	13,503 57	Dismissed
14028	Rice, Edward	140 00	50 00
14029	Rice, Edward	4,000 00	200 00
15499	Rice, Frank	801 75	250 00
14121	Richmond, Jackson L.....	3,950 00	254 95
15494	Rickman, Regina	1,316 00	250 00
267-A	Rioux, Alphonse	1,857 55	950 00
288-A	Roach, Morris A.....	922 85	544 00
3016	Roberts, Frank	116 87	Dismissed
373-A	Rochester, Syracuse & Eastern R. R. Co.	25,050 00	Dismissed
15248	Rogers, George W., & Co., Inc.....	67,558 90	32,301 90
3060	Roof, Stickney	297 50	141 66
14914	Romano, Peter	6,986 00	167 00
2358-A	Rosa, Nelson W., and ano.....	15,000 00	5,576 93
15570	Roscoe, Ben W., Jr.....	2,500 00	1,476 70
15229	Ross, George and ano.....	45 00	30 00
2098-A	Ross, Glenn	5,000 00	Dismissed
1001-A	Rossow, George C., etc.....	11,068 50	1,584 16
3061	Rowland, Palmer	162 50	83 69
325-A	Rowley, Richard D.....	639 75	350 00
2373-A	Ruby, Richard B.....	52 97	52 97
14829	Russell, James H.....	620 00	Dismissed
13846	Ryan, Jerry F.....	15,274 00	500 00
268-A	Ryan, Martin	590 00	175 00
2353-A	Ryan, Walter S.....	103 50	103 50
15508	Scanlon, Dennis	3,790 00	125 00
15104	Scanlon, Joseph P.....	3,779 96	Dismissed
15239	Scanlon, William	1,387 00	581 60
14076	Schluskar, Frederika, Ind., etc.....	1,525 00	220 00
2325-A	Schaub, Charles A., and ano.....	127 00	100 00
2326-A	Scheifele, George L.....	146 00	146 00
9514	Schermerhorn, Helen M.....	2,059 20	Dismissed
2383-A	Schroepel, Albert W., et al.....	8,000 00	Dismissed
3068	Schubert, John	297 50	141 66
13979	Schultze, Paul	950 00	950 00
2621-A	Schunnemunk Construction Co.....	3,204 80	3,147 05
3018	Seade, William, Jr.....	297 50	142 49
2011-A	Seegar, Walter L.....	275 00	150 00
1758-A	Seeley, Charles E.....	24,250 00	2,000 00

No.	Name of Claimant	Amount claimed	Amount awarded
2772-A	Seneca Water Company, The.....	\$47,999 13	\$5,452 78
15228	Shattuck, Daniel and ano.....	450 00	Dismissed
3019	Shaver, George	148 75	142 49
15224	Sherman Stalter Company, The.....	5,413 14	3,823 69
15842	Sherman Stalter Company, The.....	141,549 38	24,321 24
3065	Sherry, Patrick	148 75	141 66
15021	Sibley, Hiram W., et al.....	3,971 40	Dismissed
3066	Sievert, John	148 75	Dismissed
308-A	Simpson, John F., and ano.....	312 35	200 00
14986	Skiff, Marvin	250 00	Dismissed
14000	Skinner, Lewis H.....	407 00	7 00
14703	Smith, Edward, Packing Company....	715 00	Dismissed
2809-A	Smith, Ella J., Individually, etc.....	6,200 00	250 00
646-A	Smith, James B.....	3,363 00	Dismissed
2526-A	Smith, Marie	2,000 00	400 00
3063	Smith, Spencer	297 50	141 66
15217	Smith, Weldon D.....	96 38	81 38
309-A	Smith, William H.....	411 26	275 00
10360	Snell, Jacob Salem.....	100 00	Dismissed
1833-A	Snyder, John L.....	2,635 00	300 00
2404-A	Soutar, John W.....	922 00	227 00
14001	Spoonnoggle, Francis P.....	2,035 76	35 00
3064	Spraker, M. Goodsell.....	148 75	Dismissed
3623-A	Stanton, Richard P.....	6,744 29	Dismissed
3020	Stauring, Frankling	297 50	142 49
3017	Stauring, John P.....	297 50	142 49
15006	Stebbins, Henry H., et al.....	35 000 00	11,500 00
15122	Steves, John E.....	20,000 00	Dismissed
15132	Stewart, Alexander M., and ano.....	1,431 00	364 90
2354-A	Stewart, Anna E., and ano.....	415 02	310 00
15252	Stotesbury, Louis W.....	455 58	455 58
1512-A	Stranahan, J. Orley.....	44 15	44 15
2281-A	Stranahan, Orley J.....	490 00	175 00
14932	Studor, Emma B.....	1,037 00	125 00
2468-A	Suffolk Contracting Company.....	26,020 72	5,902 10
15151	Sullivan, Gertrude	5,345 00	1,200 00
14074	Sullivan, Jenny H., Ind., etc.....	7,780 00	828 75
3067	Swart, Snell	297 50	141 66
3062	Swart, Walter	297 50	141 66
15158	Swick, G. Herbert.....	200 00	75 00
15374	Swick, G. Herbert, as comm., etc.....	200 00	75 00
1509-A	Sylvan Beach Union Chapel.....	203 00	150 00
2282-A	Sylvan Beach Union Chapel.....	165 00	50 00
1682-A	Tang, Bernhard	993 00	Dismissed
3021	Tapling, George	255 00	100 09
2783-A	Tasker, Benjamin M.....	1,250 00	Dismissed
13948	Thayer, Warren T., et al.....	132 79	132 79

No.	Name of Claimant	Amount claimed	Amount awarded
15368	Thomas, Carrie J.....	\$791 20	Dismissed
15673	Thomas, Harriet	27,000 00	\$13,000 00
14944	Thomson, George E., as liquidator, etc.	4,956 20	4,956 20
14687	Titchener, Edmund H., as trustee.....	5,275 61	3,829 64
14218	Traver, William A.....	81 00	40 50
14002	Tripp, Ira A., and ano.....	1,012 50	25 00
15273	Troyanowich, Andrew, as adm.....	5,393 00	500 00
9242	True, George E., et al.....	60,103 90	Dismissed
2782-A	Turney, Henry P.....	450 00	Dismissed
2355-A	Tuttle, Nellie D.....	263 80	165 00
13772	Tyron, William, and ano.....	875 00	Dismissed
13831		1,400 00	
14816		1,400 00	
1982-A	United Construction Co.....	11,718 53	7,873 95
1927-A	Vanderpool, Frank	9,760 00	Dismissed
15139	Vanderpool, Jeremiah	300 00	190 00
15502	Vanderpool, Lucy, exec., etc.....	9,760 00	Dismissed
3056	Van Patten, Milo.....	297 50	142 49
8907	Van Tassel, Abraham.....	45 00	Dismissed
15317	Van Evera, Jay, and another.....	869 38	175 00
15318	Van Evera, Jay, and ano.....	574 38	225 00
3069	Van Voast, Charles.....	297 50	141 66
14918½	Vaughn, Helen M. Schermerhorn.....	505 92	505 92
14091	Vedder, Warren W.....	3,675 00	425 00
9096	Virgil, Fred	253 25	Dismissed
9017	Virgil, Lute	703 90	Dismissed
15373	Volkosh, Fred	500 00	Dismissed
15133	Vreeland, Bertha Lay.....	400 00	Dismissed
2107-A	Vrooman, Edward S.....	3,925 00	350 00
14051	Vrooman's, J. V., Sons Co.....	1,170 00	1,050 00
15156	Vrooman, Lizzie, as admx.....	42 00	Dismissed
15504	Vrooman, Millie	401 00	275 00
14220	Walrath, Abram Company, The.....	150 00	50 00
13931	Walsh Construction Company.....	14,464 57	735 00
3025	Walthart, S. J.....	87 50	Dismissed
14012	Warner, Edward	333 30	125 00
14013	Warner, Edward	3,000 00	200 00
2327-A	Warr, William W.....	423 00	170 00
3087-A	Waterloo Woolen Mfg. Co.....	2,000 00	Dismissed
2090-A	Waterloo Woolen Mfg. Co.....	3,500 00	Dismissed
2297-A	Waterloo Woolen Mfg. Co.....	6,000 00	Dismissed
2298-A	Waterloo Woolen Mfg. Co.....	33,850 00	Dismissed
15169	Webb, William T., Rev.....	195 00	Dismissed
2454-A	Weimer, Frederick	220 00	75 00
14880	Weimer, Frederick	1,482 66	427 00
14983	Welch, J. Henry.....	25 00	Dismissed
13845	Welcome, George A., Jr.....	2,000 00	2,000 00

No.	Name of Claimant	Amount claimed	Amount awarded
2639-A	Weller, Spencer	\$7,550 00	Dismissed
14270	Wendell, James G.	5,000 00	Dismissed
9876	West Shore R. R. Co., etc.	56,000 00	Dismissed
9877	West Shore R. R. Co., etc.	46,000 00	Dismissed
1584-A	West Shore Railroad Co., etc.	200,300 00	Dismissed
14371	West Shore Railroad Co., etc.	1,250 00	Dismissed
3070	Whalen, David	148 75	\$141 66
15307	Whedon, Milford D.	1,968 38	1,968 38
15134	Whitbeck, Ella B.	1,000 00	Dismissed
14166	White, George B., and ano.	1,600 00	Dismissed
13959	Whitman, G. Boardman.	134 50	67 50
15489	Whitmeyer, Henry	2,464 50	1,066 00
15388	Whitmore, Rauber & Vicinus.	134 29	134 29
3024	Wittenbeck, George	297 50	142 49
9397	Whitwell, Ella W., and ano.	526 95	Dismissed
14841	Wilcox, Bernard E.	680 00	Dismissed
14843	Wilcox, Fred A.	702 00	50 00
3022	Wilds, John H.	297 50	142 49
310-A	Wilford Realty Company.	200 00	150 00
328-A	Williams, Addie M.	194 00	125 00
15159	Williams, Mary Ellen, and ano.	10,000 00	650 00
14021	Wilson, Thomas	3,500 00	250 00
2356-A	Woglum, John H.	989 04	937 56
2328-A	Wooding, Albert	225 00	85 00
835-A	Wright, Cora V.	150 00	Dismissed
15099	Wright, Cora V.	1,075 00	150 00
15138	Wright, Cora V.	75 00	Dismissed
2374-A	Wright, Elmer	420 00	150 00
15534	Yarter, Adolphus D.	1,600 00	450 00
7812	Young, Charles H., exec.	350 00	75 00
3071	Youngs, George H.	148 75	142 49

AWARDS BY REFEREES

The following claims, tried before referees, were disposed of during 1918:

(By HON. ALBERT HAIGHT)

No.	Claimant	Amount claimed	Amount awarded
14471	Buffalo Dredging Company.	\$661,690 23	\$150,000 00
14696	Burgard, Henry P.	475,686 41	172,384 25

(By HON. IRVING G. VANN)

10006	Marvin, Will F., etc.	50,000 00	5,700 00
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Amount claimed	\$1,187,376 64
Amount awarded	328,084 25

AGRICULTURAL LAW

The total number of violations of the Agricultural Law referred to this office by the Agricultural Division during the year 1918 has been.....	938
The Agricultural Division also referred during the year 1918 cases for failure to license dogs during the year 1917 to the number of	5,700
The State has been successful in collecting penalty or judgment in	1,175
Cases discontinued by reason of insufficient evidence, death of defendant, etc.	872
Judgments were rendered against the People in.....	16
Number of cases in which judgments have been recovered in favor of the State and which remain uncollected.....	60
Number of cases on appeal.....	9
Criminal proceedings brought against defendants.....	87
Total number of cases disposed of.....	2,210
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Amount of penalties and costs recovered.....	\$27,237 23
Amount received in satisfaction of judgments.....	3,339 25
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Payment to Commissioner of Agriculture, collections on bonds (Laws of 1913, chap. 457).....	\$10,418 59
Payment to State Treasurer.....	30,576 48
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Total.	\$40,995 07
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PROCEEDINGS IN APPELLATE COURTS**COURT OF APPEALS**

Daniel J. Shanahan, Appellant, v. State of New York, Respondent. (Personal injury. To be argued.)

People of the State of New York, Appellant, v. Leroy T. Bradford, Respondent. (Penalty for failure to exhibit license to hunt. To be argued.)

Hudson and Manhattan Railroad Company, Appellants, v. State of New York, Respondent. (Refund of Transfer Tax stamp money. To be argued.)

The People of the State of New York v. Levi B. Dedrick, Appellant. (Appeal from Judgment re title to land in Adirondacks. To be argued.)

The People of the State of New York ex rel. Eugene M. Travis as Comptroller of the State of New York v. Ann Arbor Company, Appellant. (Transfer Tax. To be argued.)

In the Matter of the Claim of Bernardina Roberto et al. for Compensation. (Compensation Law. To be argued.)

Victoria Konner, Appellant, v. The State of New York, Respondent. (Damage to property. To be argued.)

Columbia Distilling Company, Appellant, v. The State of New York. (Appropriation of land. To be argued.)

The People of the State of New York v. Levi B. Dedrick, Appellant. (Trespass on State lands. To be argued.)

Frank Osborn v. Lemon Thompson et al. constituting the Board of Examiners of Feeble-Minded, etc., Appellant. (Constitutionality of Sterilization Act. To be argued.)

The People of the State of New York, Appellant, v. The Delaware and Hudson Company. (Encroachment on State Land. To be argued.)

William H. Smith v. The State of New York, Appellant. (Personal injury. To to be argued.)

In the Matter of the Claim of Michael Dugan. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Michael Bianc. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Matthew F. Hogan. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Melbourn Haley. (Workmen's Compensation Law. To be argued.)

In the Matter of the Estate of Cathelina Groot. (To be argued.)

Saratoga State Waters Corporation, Appellant, v. George D. Pratt, Respondent. (To compel performance of agreement re State Reservation Land. To be argued.)

People of the State of New York, Respondent, v. Walter C. Witherbee et al., Appellant. (Title to Land in Adirondacks. To be argued.)

Orville Smith, Respondent, v. Daniel Miller, Appellant. (Trespass. To be argued.)

In the Matter of the Claim of Florence J. Reiter. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of George Sweeting. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Elizabeth Vaughn. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Thomas Sanders. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Anthony Rendino. (Workmen's Compensation Law. To be argued.)

In the Matter of the Claim of Jane Plass. (Workmen's Compensation Law. To be argued.)

Appellant Division — First Department

Charles Smith v. Edwin Duffey as Commissioner of Highways of the State of New York. (Injunction restraining awarding of highway contract. To be argued.)

Appellate Division — Second Department

Samuel Klein, Appellant, v. Peter Spinell, Respondent. (Marking spools of thread. Argued but not decided.)

Elmo Brown et al., constituting the Board of Trustees for School District No. 8, Town of Greenbush, Westchester Co., State

of New York, v. William Bunselmeyer et al., claiming to constitute the Town Board of Education for the Town of Greenbush, etc. (Constitutionality of Education Law. To be argued.)

Appellant Division — Third Department

Charles G. Sybrandt, Appellant, v. The State of New York. (Appropriation of land. To be argued.)

J. Van Vechten Olcott as Receiver of Ferguson Contracting Co., Appellant, v. The State of New York. (Damages on Barge canal contract. To be argued.)

Town of Remsen, Oneida County, N. Y., Appellant, v. The State of New York. (For taking possession of certain bridges. To be argued.)

Town of Russia, Herkimer County, N. Y., Appellant, v. The State of New York. (For taking possession of certain bridges. Argued but not decided.)

Jordan Electric Light & Power Company, Appellant, v. The State of New York. (Destruction of claimant's dam, outlet of Skaneateles lake. To be argued.)

The People of the State of New York, Appellant, v. Eugene W. Durkee. (Violation Pure Food Law. To be argued.)

The People of the State of New York v. Dr. George H. Davis, Appellant. (Violation of Pure Food Law. To be argued.)

In the Matter of the Application of the Town of Colonie, in the County of Albany, and John N. Carlisle, as State Commissioner of Highways of the State of New York, for a writ of certiorari, etc., v. Seymour Van Santvoord et al., constituting the Public Service Commission, Second District, re application of the D. & H. Co., for permission to construct tracks, etc. (Certiorari to review determination of Commission re construction of tracks. To be argued.)

William B. Brooks, Appellant, v. The State of New York. (Damages for change of grade. To be argued.)

M. E. Church of Minetto, Appellant, v. The State of New York. (Damages for change of grade. To be argued.)

Anna Tidd, Appellant, v. The State of New York. (Damages for change of grade. To be argued.)

Robert MacDonald, Appellant, v. The State of New York. (Damages due to change of grade. To be argued.)

J. Courtney Shutts and Belle M. Shutts, Appellants, v. The State of New York. (Damage due to change of grade. To be argued.)

The Burt-Olney Canning Company, Appellant, v. The State of New York. (Appropriation of land. To be argued.)

Henry Geisenhoner, Appellant, v. The State of New York. (Damage to land and riparian rights. To be argued.)

Isabel Davies and Charles Davies, individually and as Executors of the Last Will, etc., of Marian Davies, deceased, and William Davies, Appellants, v. The State of New York. (Appropriation of land. Argued but not decided.)

The Oswego and Syracuse Railroad Company and the Delaware, Lackawanna & Western Railroad Company, Appellants, v. The State of New York. (Appropriation of land. Argued but not decided.)

Loreto Lomanto v. The State of New York, Appellant. (Negligence in maintaining highway. Argued but not decided.)

Ray Burmaster, Appellant, v. The State of New York. (Damage due to change of grade of highway. Argued but not decided.)

Richard P. Stanton, Appellant, v. The State of New York. (Highway contract. To be argued.)

Daniel Lanahan v. The State of New York, Appellant. (Personal injury on State highway. To be argued.)

Christian Gutekunst v. The State of New York, Appellant. (Personal injury on State highway. To be argued.)

George W. Day, an infant, by Kate Day, his guardian ad litem, Appellant, v. The State of New York. (Negligence. To be argued.)

Gertrude Sullivan v. The State of New York, Appellant. (Personal injury. To be argued.)

Glenn Ross, Appellant, v. The State of New York. (Personal injury. Argued but not decided.)

Fred Volkosh, Appellant, v. The State of New York. (Negligence. To be argued.)

Taggart Paper Company, Appellant, v. The State of New York. (Claim for interest on award. To be argued.)

Frisbie & Stansfield Knitting Company, Appellant, v. The State of New York. (Damage by loss of water power. To be argued.)

Mary E. McGrath, as Administratrix of the Goods, Chattels, etc., of Patrick McGrath, deceased, Appellant, v. The State of New York. (Personal injury. To be argued. Two actions.)

Frances G. Myers, Appellant, v. The State of New York. (Damage to property by change of grade. To be argued.)

The People of the State of New York, Appellants, v. The Hudson River Connecting Railroad Corporation. (Erection of bridge over Hudson river. Argued but not decided.)

The People of the State of New York ex rel. The Iroquois Door Company v. Walter H. Knapp et al., constituting the State Tax Commission of the State of New York. (Certiorari to review determination of Tax Commission. Argued but not decided.)

Julia A. Hooper et al., Appellant, v. The State of New York. (Destruction of crops by canal leakage. Two actions. To be argued.)

William Tryon and Albert Tryon, Appellants, v. The State of New York. (Damage by canal leakage. Three actions. To be argued.)

Morris Morris, Appellant, v. The State of New York. (Destruction of crops by canal leakage. To be argued.)

Terrence Lambert, Appellant, v. The State of New York. (Destruction of crops by canal leakage. To be argued.)

John J. Houck, Appellant, v. The State of New York. (Damage to crop by canal leakage. To be argued. Two actions.)

Henry Angemire and William F. Roberts, Appellants, v. The State of New York. (Destruction of crops by canal leakage. To be argued.)

Frederick Johnson et al., as Executors of the Last Will and Testament of George F. Johnson, Deceased, Appellants, v. The State of New York. (Breach of contract. To be argued.)

Gertrude Johnson, as Administratrix, etc., v. The State of New York, Appellant. (Negligence. Argued but not decided.)

West Virginian Pulp and Paper Company, Appellant, v. Duncan W. Peck et al. (Injunction. To be argued.)

Vincent Stone Company v. The State of New York, Appellant.

(Damage to quarry property by Erie canal leakage. To be argued.)

Michael Byrnes, Appellant, v. The State of New York. (Damage to property. To be argued.)

John L. Hayes Construction Company, Appellant, v. The State of New York. (Breach of contract. To be argued.)

Saranac Land and Timber Company, Appellant, v. James A. Roberts, as Comptroller of the State of New York. (Appeal from order appointing new referee and denying motion to resettle. To be argued.)

Empire United Railways, Inc., Appellant, v. The State of New York. (Damage by flooding. To be argued.)

William B. Armstrong Company, Appellant, v. State of New York. (Claim for extra labor, etc., on State reformatory contract. Argued but not decided.)

Charlotte A. Bingham, Appellant, v. State of New York, Respondent. (Damages due to closing street for Barge canal. Argued but not decided.)

People of the State of New York, Respondent, v. Clarence L. Fisher et al., Appellants. (Title to property in Adirondacks. To be argued.)

The People of the State of New York, Respondent, v. Jennie H. Ladew et al., Appellants. (Title to land in the Adirondacks. To be argued.)

The People of the State of New York, Appellants, v. Rawson L. Hayes et al., Respondent. (Title to land. To be argued.)

Jessie F. Paddleford et al., Appellants, v. State of New York, Respondent. (Balance due on highway contract. To be argued.)

Arthur J. Squire, Appellant, v. State of New York, Respondent. (Appropriation of land. To be argued.)

Walsh Construction Company, Appellant, v. State of New York, Respondent. (Highway contract. To be argued.)

John W. Haselo, Respondent, v. State of New York, Appellant. (Appropriation of land. To be argued.)

County of Oswego, Respondent, v. State of New York, Appellant. (Refund of taxes on awards paid to State by Oswego county treasurer. To be argued.)

Delaware and Hudson Co., Appellant, v. State of New York, Respondent. (Two actions for damages to purchases. To be argued.)

Bessie Grimes, Appellant, v. State of New York, Respondent. (Personal injury. To be argued.)

Andrew Hoffman, Appellant, v. State of New York, Respondent. (Damages by leakage from canal. To be argued.)

Emily R. Pratt, as Executrix, etc., Appellant, v. State of New York, Respondent. (Damage to property. To be argued.)

Andrew C. Bonnet, Appellant, v. State of New York, Respondent. (Damage to property. To be argued.)

Appellate Division—Fourth Department

The People of the State of New York v. Albert Peterson, Appellant. (Violation of the Pure Food Law. To be argued.)

The City of Utica, Appellant, v. William W. Wotherspoon, as Superintendent of Public Works of the State of New York. (To restrain use of certain canal bridges at Utica. To be argued.)

People of the State of New York v. W. E. Branch. (Violation of Agricultural Law. To be argued.)

The People of the State of New York v. Charles T. Sperry, Appellant. (Ejectment. To be argued.)

The People of the State of New York v. James Watters, Appellant. (Violation of Conservation Law—trespass. To be argued.)

New York Central and Hudson River Railroad Company v. Edmund P. Cottle et al.; The People of the State of New York, Appellant. (Payment of money out of court. Argued but not decided.)

UNITED STATES SUPREME COURT

International Bridge Company, Appellant, v. The People of the State of New York. (Construction of roadway over bridge to Squaw Island. To be argued.)

In the Matter of the Claim of Anna C. Porter et al. for the Death of Lewis M. Porter v. New York Central Railroad Company, Appellant. (Workmen's Compensation Law. To be argued.)

Standard Computing Scale Company, Appellants, v. John J. Farrell, as State Superintendent of Weights and Measures. (Sealing scales. To be argued.)

The People of the State of New York v. The State of New Jersey and Passaic Valley Sewerage Commission, Appellant. (To prohibit the discharge of sewerage into the Passaic. To be argued.)

DISTRICT COURT OF THE UNITED STATES

Crescent Manufacturing Company, Appellant, v. Charles S. Wilson, Commissioner of Agriculture of the State of New York. (Injunction to prevent Commissioner of Agriculture from interfering with sale of mapliene. To be argued.)

MISCELLANEOUS ACTIONS AND PROCEEDINGS COMMENCED DURING 1918

- Jan. 3. Metropolitan Trust Company of the City of New York as Trustee for Benefit of Holders of Bonds, etc., v. Eastern New York Railroad Company et al. (Mortgage tax.)
3. Supreme Court—Albany County. The People of the State of New York v. Metropolitan Trust Company of New York. (Injunction, mortgage tax.)
3. In the Matter of the Closing White Plains Road. Claim of the People of the State of New York v. City of New York. (See title.)
9. Supreme Court—Albany County. The People of the State of New York v. United States Fidelity and Guaranty Company. (Failure of contractors to complete highway 5472.)
11. Supreme Court—Albany County. In the Matter of the Application of the People ex rel. Jesse S. Phillips as Superintendent of Insurance for an Order to Take Possession of Property and Liquidate the Business of The Kinderhook and Stuyvesant Mutual Insurance Company. (See title.)

- Jan. 11. Supreme Court — Albany County. The People of the State of New York v. International Bridge Company. (Action No. 3. Penalty to construct bridge, Black Rock harbor.)
15. Supreme Court — Albany County. The People of the State of New York v. The John Kane Contracting Company. (Premium on State insurance fund.)
18. Supreme Court — Oneida County. Bernard Delahunt v. The State of New York, Thomas W. Barrally, Charles A. Ingersoll and American Surety Co. (Lien. Terminal Contract 28 — Oneida lake.)
19. Supreme Court — Albany County. The People of the State of New York v. James J. Finnigan. (Premium State insurance fund.)
21. Supreme Court — New York County. In the Matter of the Application of Frank F. Boulton et al. to Cancel a Certificate for Conducting Business Under the Name of "Federal Line."
23. Supreme Court — Albany County. The People of the State of New York v. Max Rosen. (Premium on State insurance fund.)
23. Supreme Court — Otsego County. The People of the State of New York ex rel. Jackson DeForest v. John B. Trombly, Agent and Warden of Clinton Prison. (Habeas corpus.)
24. Supreme Court — New York County. The Farmers Loan and Trust Company, Individually and as Trustee, v. Mary M. Russell Archibald et al. (To settle account of trustee of certain trusts.)
24. Supreme Court — Albany County. The People of the State of New York v. Thomas J. Carroll. (Premium on State insurance fund.)
- Feb. 7. Supreme Court — Albany County. The People of the State of New York ex rel. Henry P. Tuthill as County Treasurer of Suffolk County v. John C. Clark, William D. McKinstry, William Gorham

- Feb. 7. Rice, Constituting the Civil Service Commission of the State of New York. (Classification of position of private secretary to Suffolk county clerk.)
8. Supreme Court — New York County. Charles Winfield Armour, Individually, etc., v. William T. Minor et al. (Construction of will.)
14. Supreme Court — Chenango County. H. Grove Davis v. Sidney K. Johnson and State of New York. (Road repair contract No. 2765.)
16. Supreme Court — Albany County. The People of the State of New York v. The Franklin-Allen Window Cleaning Co. (Premium State insurance fund.)
20. Supreme Court — Erie County. Eugene M. Travis as Comptroller of the State of New York v. Percival M. White, Clara H. White, George E. Leman and John Simon. (Foreclosure of United State Deposit Fund Mortgage No. 734.)
21. Supreme Court — New York County. Battery Park National Bank v. The People of the State of New York, Fidelity and Deposit Company of Maryland, W. F. Plass & Bro., Inc., and Harry W. Lichtenstein as Assignee of W. F. Plass & Bro., Inc. (Lien, Chronic Hospital, Long Island State Hospital.)
23. Supreme Court — Clinton County. The People of the State of New York ex rel. Thomas Murphy v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
- March 1. Supreme Court — Bronx County. Giuseppa Cosenza v. Thomas M. McCarthy et al. (To register title to real property.)
6. Supreme Court — Westchester County. The People of the State of New York ex rel. James J. Kelly v. William H. Moyer as Agent and Warden of Sing Sing Prison. (Payment of back salary as storekeeper, Sing Sing Prison.)

- March** 14. Supreme Court — Westchester County. The People of the State of New York ex rel. Harry W. Brooks v. William F. Moyer as Warden of Sing Sing Prison. (Habeas corpus.)
14. Supreme Court — Saratoga County. The People of the State of New York ex rel. Patrick Kenny v. William H. Moyer as Warden and Agent of State Prison at Sing Sing. (Habeas corpus.)
14. Supreme Court — Westchester County. The People of the State of New York ex rel. Edwin W. Fiske and Edwin W. Fiske v. Edward F. Brush. (Quo warranto — mayor of Mount Vernon.)
19. United States District Court — District of New Jersey. In the Matter of the Flemish Phonograph Company, Bankrupt. (Franchise tax under Article 9-A.)
27. County Court — Queens County. In the Matter of the Application of Warren W. Gower et al. for the Sale of Real Estate. (Payment of money from State Treasury.)
28. Supreme Court — Schenectady County. The New York Central Railroad Company v. The City of Schenectady, a Municipal Corporation, The People of the State of New York, and Edward Schoeneck et al., Constituting the Commissioners of the State of New York. (Condemnation of abandoned canal lands at Schenectady.)
30. Supreme Court — Cayuga County. The People of the State of New York ex rel. Apolinary Sobolewski v. Warden of Auburn Prison. (Habeas corpus.)
- April** 2. Supreme Court — Onondaga County. In the Matter of the Application of the Trust and Deposit Company of Onondaga for an Order Directing Comptroller to Turn Over to It as Successors in Interest of James Lanzetta, a Private Banker. (See title.)

- April 3. Supreme Court — Westchester County. The People of the State of New York ex rel. Katherine Spock v. Charles Bernstein, Superintendent of Rome State Custodial Asylum. (Habeas corpus.)
8. Supreme Court — Cattaraugus County. The Alleghany Valley Brick Company v. Keeseville Road Company, Inc., and The People of the State of New York. (Lien, Greenwich Village road, Contract 1436.)
8. Supreme Court — Cayuga County. The People of the State of New York ex rel. William Johnson v. Harry R. Kidney, Agent and Warden of Auburn Prison. (Habeas corpus.)
9. Supreme Court — Westchester County. In the Matter of the Application of Joseph E. Goodwin for a Peremptory Writ of Mandamus Directed to Robert A. Patterson, Comptroller of Westchester County, and William Archer, County Treasurer. (Librarian Supreme Court Library, White Plains.)
13. Supreme Court — Onondaga County. Rock Cut Stone Company v. Thomas L. Ryan, First National Bank of Whitney Point; Standard Oil Company, Peoples' Trust Company, Clifford L. Robinson and People of the State of New York. (Lien, Contract 1486, Whitney Point road.)
13. Supreme Court — Oneida County. Gilbert N. Lehr as Trustee, etc., v. Ysidora B. Payne et al., Merton E. Lewis as Attorney-General. (Construction of will.)
17. Supreme Court — Putnam County. The People of the State of New York ex rel. Edward B. Whaley v. Gilbert Eastwood. (Quo warranto. Office Superintendent of Highways to town of Patterson.)
18. Supreme Court — Westchester County. People of the State ex rel. Charles McDonald (alias Charles Gondolf v. James M. Carter, Superintendent of

- April 18. Prisons and William H. Moyer as Warden of Sing Sing Prison. (Release from jail.)
19. Supreme Court — Columbia County. The People of the State of New York v. Charles Walker. (Illegal practice of dentistry.)
23. Supreme Court — Albany County. The People of the State of New York v. Irving Goldstein et al. (Insurance fund premium.)
- May 6. Supreme Court — Albany County. The People of the State of New York v. John H. Tipler, Inc. (Insurance fund premium.)
8. Supreme Court — Albany County. The People of the State of New York v. American Phonograph Company. (Insurance fund premium.)
8. Supreme Court — Albany County. The People of the State of New York v. Universal Steam Laundry Company, Incorporated. (Premium State insurance fund.)
15. Supreme Court — Albany County. The People of the State of New York v. Benno W. Sandbach.
16. Supreme Court — Erie County. In the Matter of the Application for the discharge of Mary Pasternak from Syracuse State Institution for Feeble-Minded Children. (Habeas corpus.)
20. Supreme Court — Madison County. The People of the State of New York v. Edward L. Bettinger. (Illegal practice veterinary surgery.)
20. Supreme Court — Suffolk County. In the Matter of the Application of Herman M. Biggs, Commissioner of Health for a writ of mandamus v. Riley P. Howell, President and the Members of the Board of Health of the Town of Brookhaven, Suffolk County. (To abate nuisance.)
20. Supreme Court — Albany County. The People of the State of New York v. G. Trowbridge Hollister, E. Mortimer Barnes and C. Sheldon Chauncey, Ind., as composing firm of Hollister, Fish & Company. (Mortgage tax.)

- May 20. Supreme Court — Albany County. The People of the State of New York v. Anthony Drogenes. (Premium State Insurance Fund.)
20. Supreme Court — Clinton County. The People of the State of New York ex rel. John Collins v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
25. Supreme Court — Albany County. The People of the State of New York v. Cunningham-Peddrick, Incorporated. (Premium State insurance fund.)
- June 3. Supreme Court — New York County. In the Matter of the Petition of John J. Hopper. (Registration of land title.)
6. Supreme Court — Erie County. Frederick A. Zuckmaier v. Albert Anguish, People of the State et al. (Register title to real property.)
11. Supreme Court — Bronx County. The People of the State of New York v. The City of New York, Arnold B. MacStay as Commissioner of Department of Street Cleaning et al. (To compel removal of City Street Cleaning carts from property of New York State.)
12. Supreme Court — Albany County. Massillon Bridge and Structural Co. v. Stanley Construction Co., Betram L. Search, and People of the State of New York. (Lien. Erection, etc., of three steel bridges.)
14. Supreme Court — Rockland County. In the Matter of the Petition of Henry von L. Meyer, Suffern. (Register title to real property.)
17. Supreme Court — New York County. In the Matter of the Petition of Charles C. Burlingham. (To register title.)
20. Supreme Court — New York County. In the Matter of the Petition of Sarah M. Smith. (To register title.)
27. Supreme Court — Clinton County. The People of the State of New York ex rel. John Conway v.

- June 27. John B. Trombly as Agent and Warden of Dannemora Prison. (Habeas corpus.)
- July 1. Supreme Court — New York County. The People of the State of New York v. Casualty Company of America. (Claim of Brooklyn State Hospital on bond for construction of reception building.)
2. Supreme Court — Kings County. In the Matter of the Application of Margaret M. Buckley for an order directing the register of Kings County to satisfy of record a certain mortgage, etc. (See title.)
5. Supreme Court — Genesee County. In the Matter of the Application of the People of the State of New York by Jesse S. Phillips as Superintendent of Insurance for an order to take possession of the property and liquidate the business of the Stafford Benefit Association. (See title.)
5. Supreme Court — Clinton County. The People of the State of New York ex rel. Henry E. Bush alias John H. Kelly v. John M. Trombly, as Agent and Warden of Clinton Prison. (Habeas corpus.)
8. Supreme Court — Suffolk County. The People of the State of New York v. American Bonding Company of Baltimore. (To collect from surety for faithful performance contract, Dunbar Contracting Co. Three actions.)
9. Supreme Court — Suffolk County. The People of the State of New York v. The Bankers Surety Company. (To collect on bond for faithful performance of contract, Henry J. Mullen.)
9. Supreme Court — Suffolk County. The People of the State of New York v. United States Fidelity and Guaranty Company. (To collect on bond for faithful performance of contract, Twombly & Eldert.)
10. Supreme Court — Suffolk County. The People of the State of New York v. The Fidelity & Casualty Company of New York. (To collect on bond for faithful performance contract, Joseph A. Boyce.)

- July 11. Supreme Court — Albany County. John McCulloch, Maria McCulloch et al. (Payment of money on deposit in State Treasury.)
17. Supreme Court — Oneida County, The People of the State of New York ex rel. John M. Pugh and H. Bela Cary v. Peter E. Hoffman. (Quo Warranto. Village trustees, Whitesboro.)
19. Supreme Court of Westchester County. Adam G. Henn v. City of Mount Vernon. (Constitutionality of section 245, Military Law, salary, city forester of Mount Vernon.)
19. Supreme Court — Jefferson County. Walter H. Camp as Trustee under will of Marietta P. Hay, deceased, v. The Presbyterian Society of Sackets Harbor et al. (Construction of will.)
20. Supreme Court — Erie County. In the Matter of the Application of the German Cooperative Savings & Loan Association for authority to change its name to the "Lincoln Savings and Loan Association." (Change of name.)
23. Supreme Court — New York County. In the Matter of the Application to close and wind up The Fourteenth Street Personal Loan Company, a corporation under the Banking Law. (See title.)
26. Supreme Court — Westchester County. Susie H. Mitchell, v. All persons who have claims, etc., Harry H. Mitchell, People of the State of New York et al. (To rectify deed.)
30. Supreme Court — Steuben County. Wayland Dime Savings & Loan Association v. Warren B. Frazer et al. (Payment of money from State treasury.)
30. Supreme Court — New York County. Joseph B. De Young v. Cloak Operators Union Local No. 1, Incorporated. (Receivership.)
- Aug. 2. Supreme Court — Bronx County. In the Matter of the Petition of Thomas J. Higgins, 453 E. 135th street, New York Bronx borough to register title to certain lands. (Register title.)

- Aug. 3. Supreme Court — Washington County. The People of the State of New York v. State Bank of Fort Edward. (To reform deed.)
5. Supreme Court — Albany County. The People of the State of New York v. Hartman Wrecking Company, Incorporated. (Premium State insurance fund.)
10. Supreme Court — New York County. In the Matter of the Petition of Frank Fetzer, Scarsdale, N. Y., to register title to 645 Lexington avenue. (Register title to real property.)
10. Supreme Court — New York County. In the Matter of the Petition of Blanche B. Newkirk, 18 E. 71st street, New York, to register title to 519-523 W. 178th street and 261 and 267 Audobon street. (Register title to real property.)
14. Supreme Court — Onondaga County. Peter LaRue v. State of New York, Criswell & Mallory, Inc., and O'Hara Paint & Varnish Co., Inc., (Lien. Contract to paint guard-rails and resurface highway. Contract 1073.)
14. Supreme Court — Onondaga County. The O'Hara Paint and Varnish Company v. State of New York, Criswell & Mallory, Inc., and Peter LaRue. (Lien. Contract to resurface highway and paint guard-rails. Contract 1073.)
14. Supreme Court — Rockland County. In the Matter of the Petition of Sarah M. Cooper of 199 Derrom avenue, Paterson, N. J. (Register title to real property.)
19. County Court — Erie County. In the Matter of the Petition of George Hale, for leave to dispose of property. (See title.)
20. Supreme Court — Bronx County. In the Matter of the Petition of John H. Mehlop of 4741 Richardson avenue, New York City, to register title. (Register title to real property.)

- Aug 20. Supreme Court — Bronx County. In the Matter of the Petition of Bessie Ruth, 445 Audobon avenue, New York City, to register title. (Register title to real property.)
20. Supreme Court — Kings County. In the Matter of the Application of the Bank of Flatbush for terminating the existence of Bank. (See title.)
20. Supreme Court — New York County, The People of the State of New York v. American Creosating Company. (Dissolution.)
20. Supreme Court — St. Lawrence County. The People of the State of New York ex rel Daniel D. Melville v. John B. Trombly as Agent and Warden of Clinton State Prison. (Habeas corpus.)
22. Supreme Court — Albany County. The People of the State of New York v. Henry J. Combs. (Premium State Insurance Fund.)
23. Supreme Court — Albany County. The People of the State of New York v. Jacob M. Leonhardt. (Premium State Insurance Fund.)
29. Supreme Court — Madison County. In the Matter of the Application of the Farmers & Merchants State Bank for permission to close business. (See title.)
30. Supreme Court — Fulton County. In the Matter of the Application of Jennie Jackson as Administratrix of Will of William Logan for payment of money out of court in action. William J. McQueen v. Margaret Calderwood et al. (Payment of money from State treasury.)
- Sept. 9. Supreme Court — Clinton County. The People of the State of New York ex rel. William Schmidt v. John B. Trombly as Agent and Warden of Clinton State Prison. (Habeas corpus.)
9. Supreme Court — Clinton County. The People ex rel. Harry Berkovitz v. John B. Trombly as Agent and Warden of Clinton State Prison. (Habeas corpus.)

- Sept. 11. Supreme Court — Rockland County. The People of the State of New York ex rel. Ina Phillips Chambers v. Hortense V. Bruce, Superintendent of New York Training School for Girls at Hudson, New York. (Habeas corpus.)
11. Supreme Court — Otsego County. Lester Hubbard v. Edward E. Brady. (Malicious prosecution and false arrest.)
11. Supreme Court — Kings County. Mary Healy v. State of New York and Stephen Callaghan. (Breach of promise.)
16. Supreme Court — App. Div. Fourth Dept. The People of the State of New York v. Charles T. Sperry. (Ejectment.)
23. Supreme Court — New York County. In the Matter of the Application of Louis and Beckie Grunner to obtain the custody of their child Bertha Grunner. (Habeas corpus.)
26. Supreme Court — New York County. In the Matter of the Petition of Thomas Harper, 32 Leggett avenue, Woodhaven, Long Island, N. Y., to register title to certain property. (Register title to real property.)
28. Supreme Court — Schenectady County. In the Matter of the Application of Walter H. Knapp, Ralph W. Thomas and John J. Merrill as State Tax Commissioners for an order directing the correction or cancellation of the assessment roll of the City of Schenectady, pursuant to section 173-a of the Tax Law. (See title.)
- Oct. 1. Supreme Court — Rockland County. George Washburn v. International Fidelity Insurance Company, State of New York et al. (Lien. Repair Contract 669 on Road 9006.)
2. Supreme Court — Onondaga County. The People of the State of New York v. George C. Siple. (Illegal practice as veterinarian without registration.)

- Oct. 4. Supreme Court — New York County. John S. Kedovsky et al. v. Archbishop and Consistory of the Russian Orthodox Greek Catholic Church et al. (Receivership.)
9. Supreme Court — New York County. In the Matter of the Petition of George D. Sherman of Port Henry, N. Y., to register title. (Lot 22. Register title to real property.)
10. Supreme Court — Westchester County. The People of the State of New York ex rel. George Debrow v. William H. Moyer as Agent and Warden of Sing Sing Prison. (Habeas corpus.)
10. Supreme Court — Westchester County. The People of the State of New York ex rel. Otto Meyer v. William H. Moyer as Agent and Warden of Sing Sing Prison. (Habeas corpus.)
11. Supreme Court — Erie County. The People of the State of New York v. Buffalo Printing Ink Works. (Dissolution.)
11. Supreme Court — Cayuga County. The People of the State of New York ex rel. Burton W. Gibson v. Harry R. Kidney as Agent and Warden of Auburn Prison. (Habeas corpus.)
13. Supreme Court — Westchester County. The People of the State of New York ex rel. Gottfried Filchner alias George Fay v. William H. Moyer as Agent and Warden of Sing Sing Prison. (Habeas corpus.)
15. Supreme Court — New York County. In the Matter of the Application of Manhattan Railway Company v. New York Life Insurance and Trust Company et al. relative to acquiring title to certain real property in New York City. (See title.)
16. Supreme Court — St. Lawrence County. Joseph E. Fell v. Mecca Construction Company, Robert J. Donohue as Trustee in Bankruptcy of Mecca Construction Company, City of Ogdensburg, Eugene M. Travis as Comptroller and the State of New

- Oct. 16. York. (Lien. Construction viaduct over New York Central tracts.)
17. Supreme Court — Westchester County. The People of the State of New York ex rel. John Campbell alias John Augley v. William H. Moyer as Agent and Warden of Sing Sing Prison. (Habeas corpus.)
19. Supreme Court — Clinton County. The People of the State of New York ex rel. Alphonsus Serano v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
19. Supreme Court — Clinton County. The People of the State of New York ex rel. Albert D. Gleason v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
19. Supreme Court — Clinton County. The People of the State of New York ex rel. Joseph Levy v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
19. Supreme Court — Clinton County. The People of the State of New York ex rel. Joseph Cook v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
19. Supreme Court — Clinton County. The People of the State of New York ex rel. John Williams v. John B. Trombly as Agent and Warden of Clinton Prison. (Habeas corpus.)
23. Supreme Court — Essex County. New York State Hospital for Treatment of Incipient Pulmonary Tuberculosis v. The City of Fulton. (Maintenance of patients at Hospital at Raybrook.)
23. Supreme Court — App. Div. Second Dept. The People of the State of New York ex rel. Henry M. Bennett v. William H. Moyer, Agent and Warden of Sing Sing Prison. (Habeas corpus.)
24. Supreme Court — Cayuga County. The People of the State of New York ex rel. Max Rosenfeld v.

- Oct. 24. Harry R. Kidney as Agent and Warden of Auburn Prison. (Habeas corpus.)
25. Supreme Court — Essex County. New York State Hospital for Treatment of Incipient Pulmonary Tuberculosis, the Town of Brutus. (Maintenance of patients at hospital.)
25. Supreme Court — Westchester County. In the Matter of the Application of Frederick D. Fremd, Charles Fremd and Sarah C. Jenkins for payment to them of money paid into Court. (Frederick D. Fremd v. Frederick Clague. See title.)
26. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for leave to commence an action against The Brooklyn Dentists, to procure a judgment vacating its charter and annulling its corporate existence. (See title.)
28. Supreme Court — Kings County. Yarwall-Waring Company v. Albert Winternitz, State of New York et al. (Lien. Boiler plant, Long Island State Hospital, Brooklyn.)
- Oct. 29. United States District Court — Eastern District of New York. In the Matter of Edward B. Jordan and Company, Inc., Bankrupt. (See title.)
- Nov. 2. Supreme Court — Albany County. The People of the State of New York v. Fred Snay and American Fidelity Company. (Failure to properly complete contract. Highways 756-5187.)
2. Supreme Court — Albany County. The People of the State of New York v. Fred Snay and American Fidelity Company. (Failure to properly complete contract. Highway 5189.)
9. Supreme Court — Kings County. The People of the State of New York ex rel. Lawrence Marks v. Harry R. Kidney, Agent and Warden of Auburn Prison. (Habeas corpus.)
12. Supreme Court — Queens County. In the Matter of

- Nov. 12. the Application of the City of New York relative to acquiring title, etc., for opening of Ulster Avenue, Westchester Avenue, 117th Avenue and Dearborn Avenue. (See title.)
14. Supreme Court — Clinton County. The People of the State of New York ex rel. Joseph T. Monahan (alias Joseph B. Murphy) v. John B. Trombly, Agent and Warden of Clinton Prison. (Habeas corpus.)
14. Supreme Court — Clinton County. The People of the State of New York ex rel. Edward Burton v. John B. Trombly, Agent and Warden of Clinton Prison. (Habeas corpus.)
15. Supreme Court — New York County. Eugene Delano, etc., v. New York Foundling Hospital et al. (Construction of will.)
16. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for leave to commence an action against The Harlem Dental Company to vacate its charter. (Vacate charter.)
16. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for leave to commence an action against The Fidelity Dental Company to vacate its charter. (Vacate charter.)
16. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York to commence an action against The Yale Dental Company to vacate the charter. (To vacate charter.)
16. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for leave to commence an action against The Lowe Painless Dental Parlors, to vacate its charter. (Vacate charter.)

- Nov 19. Supreme Court — Cayuga County. The People of the State of New York ex rel. Ralph Revetti v. Harry R. Kidney, Agent and Warden of Auburn Prison. (Habeas corpus.)
22. Supreme Court — Cayuga County. The People of the State of New York ex rel. Sidney Welsh v. Harry R. Kidney, Agent and Warden of Auburn Prison. (Habeas corpus.)
22. Supreme Court — Cattaraugus County. Karl E. Spear v. Joseph P. Colligan. (False arrest by State trooper.)
29. Supreme Court — Albany County. The People of the State of New York v. Jesse M. Seymour. (To recover excess salary as attorney for Seneca Nation of Indians.)
30. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for Leave to Commence an Action Against The Woodbury Dental Parlors Company to Vacate Its Charter and Annul Its Existence. (Vacate charter.)
30. Supreme Court — Westchester County. The People of the State of New York ex rel. Martin E. Kern v. Adele L. Allen, Frederick H. Allen, Her Husband, et al. (To clear title and set aside grant by Commissioners of Land Office.)
- Dec. 6. Supreme Court — Cayuga County. The People of the State of New York ex rel. Downes Browne v. Harry Kidney as Warden of Auburn Prison.
7. Supreme Court — New York County. In the Matter of the Petition of William Lustgarten & Co., Inc., to Register Title to Certain Land. (Register title.)
10. Supreme Court — Albany County. The People of the State of New York v. John Bianchi. (Premium State insurance fund.)
10. Supreme Court — Albany county. The People of the State of New York v. S. Angert & Company. (Premium State insurance fund.)

- Dec. 10. Supreme Court — Albany County. The People of the State of New York v. Prattsburgh Railway Corporation. (Premium State insurance fund.)
12. Supreme Court — Queens County. In the Matter of the Petition of Andrew Harper et al. of 28 Seventy-fifth Street to Register Title to Property. (Register title.)
12. Supreme Court — Albany County. The People of the State of New York v. James Dempsey. (Premium insurance fund.)
13. Supreme Court — Bronx County. In the Matter of the Petition of Happy Home Realty Co., Inc., of 3609 Broadway, New York. (Register title.)
13. Supreme Court — Appellate Division, Third Department. County Construction Company v. State of New York. (To recover amount of certified check deposited with bill.)
14. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for Leave to Commence Action Against The Sanitary Dental Parlors Company to Vacate Its Charter and Annul Its Existence. (See title.)
14. Supreme Court — Albany County. In the Matter of the Application of Merton E. Lewis as Attorney-General of the State of New York for leave to Commence an action Against The Paris Dental Parlors Company to Vacate Its Charter and Annul Its Existence. (See title.)
14. Supreme Court — Bronx County. In the Matter of the Petition of Albert Chiaffarelli to Register Title. (Register title.)
14. Supreme Court — Bronx County. In the Matter of the Petition of Angelo Chiaffarelli to Register Title. (Register title.)
14. Supreme Court — Bronx County. In the Matter of the Petition of Laura Chiaffarelli to Register Title. (Register title.)

- Dec. 14. Supreme Court — Richmond County. In the Matter of the Petition of James E. Caffrey and Minnie W. Caffrey, his wife, to register title. (Register title.)
14. Supreme Court — Richmond County. In the Matter of the Petition of Minnie W. Caffrey to Register Title. (Register title.)
19. Supreme Court — New York County. In the Matter of the Petition of William Ward James et al., as Executors of John Murray, to Register Title to Real Property. (Register title.)
20. Supreme Court — Bronx County. The People of the State of New York ex rel. Harry B. Newton v. John B. Trombly, as Warden of Dannemora Prison. (Habeas corpus.)
23. Supreme Court — Appellate Division, Third Department. Empire United Railway, Inc. v. State of New York. (Damage by flooding.)
23. Supreme Court — Oswego County. The Victoria Paper Mills Company v. Edward Schoeneck, Francis M. Hugo, Eugene M. Travis, James L. Wells, Merton E. Lewis, Frank M. Williams and William W. Wotherspoon, as and Constituting the Canal Board of the State of New York, and the Fulton Light, Heat and Power Company. (Injunction to restrain using water of canal or race in Oswego.)
23. Supreme Court — Appellate Division, Third Department. In the Matter of the Application of the State Commission of Prisons with Regard to the Construction, Management and Affairs of Clinton County Jail. (See title.)
24. Supreme Court — Appellate Division, Second Department. In the Matter of the Application of the State Commission of Prisons with Regard to the Construction, Management and Affairs of Nassau County Jail. (See title.)
27. Supreme Court — Albany County. The People of the State of New York ex rel. Barcalo Manufac-

- Dec. 27. turing Company v. Walter H. Knapp, Ralph W. Thomas and John J. Merrill, as and Constituting State Tax Commission. (Certiorari; to review determination re income tax.)
28. Supreme Court — Albany County. The People of the State of New York v. Willis G. C. Wood. (Conversion of State funds, motor vehicle fines.)
30. Supreme Court — Albany County. The People of the State of New York v. Imperial Trim Company, Inc. (Premium on State insurance fund.)

ACTIONS AND PROCEEDINGS INSTITUTED AGAINST STATE OFFICIALS DURING THE YEAR 1918

- Jan. 21. Supreme Court — Albany County. The People of the State of New York ex rel. H. C. Peterson Co., Inc., v. John H. Finley. (To return check deposited with bid.)
- April 12. Supreme Court — Delaware County. The People of the State of New York ex rel. Town of Hancock, Delaware County, New York, v. The State Tax Commission of the State of New York et al. (To review equalization of assessment for 1916.)
- June 4. Supreme Court — Albany County. The People of the State of New York ex rel. George H. McEvoy v. Edwin Duffey, as Commissioner of Highways of the State of New York. (To permit cancellation and annulment Contract Road 1419.)
19. County Court — Kings County. The People of the State of New York ex rel. Albert A. Meyers v. Charles S. Wilson, as Commissioner of Agriculture of the State of New York. (Mandamus to correct certificate for payment for sheep.)
20. Supreme Court — Albany County. The People of the State of New York ex rel. Beadleston & Woerz v. Walter H. Knapp, President, Ralph W. Thomas and John J. Merrill, as Tax Commissioners, Constituting the State Tax Commission of the State of New York. (To review determination May 20, 1918, of franchise tax for 1917.)

- June. 20. Supreme Court — Albany County. The People of the State of New York ex rel. The Jacob Hoffman Brewing Company v. Walter H. Knapp et al., as Tax Commissioners of the State of New York. (To review determination May 20, 1918, franchise tax for 1917.)
20. Supreme Court — Albany County: The People of the State of New York ex rel. The Brunswick-Balke-Collender Co. v. Walter H. Knapp et al., as State Tax Commissioners of the State of New York. (To review determination of franchise tax May 20, 1918.)
20. Supreme Court — Albany County. The People of the State of New York ex rel. Tirrill Gas Machine Lighting Company v. Walter H. Knapp et al., as Tax Commissioners of the State of New York. (To review determination of May 28, 1918, franchise tax.)
22. Supreme Court — Albany County. In the Matter of the Application of The Iroquois Door Company for a Writ of Certiorari to Review the Determination of State Tax Commissioners. (Article 9-a, Tax Law.)
- July 13. Supreme Court — Albany County. In the Matter of the Application of the New Paltz, Hyland and Poughkeepsie Traction Company for a Writ of Certiorari to Eugene M. Travis, as Comptroller of the State of New York. (To compel review of determination of Comptroller and sale by him.)
20. Supreme Court — Albany County. In the Matter of the Application of The Cataract Refining and Manufacturing Company for a Writ of Certiorari to Review the Determination of the State Board of Tax Commissioners. (To review refusal to credit personal property tax paid.)
- Aug. 2. Supreme Court — Orange County. The People of the State of New York ex rel. John McBride v. Eugene M. Travis, Comptroller of the State of

- Aug. 2. New York. (Payment of money out of State treasury.)
2. Supreme Court — Suffolk County. The People of the State of New York ex rel. The Underwood Hook and Ladder Company, Inc., v. The Superintendent of Insurance of the State of New York. (To compel judgment pro rata share taxes.)
10. Supreme Court — Albany County. National Surety Company v. Edwin Duffey, as Commissioner of Highways of the State of New York. (Injunction to restrain reletting contract; seven actions.)
12. Supreme Court — Albany County. Globe Indemnity Company v. Edwin Duffey, as Commissioner of Highways of the State of New York. (Injunction to restrain reletting contract; two actions.)
21. Supreme Court — Albany County. Municipal Gas Company of the City of Albany v. The Public Service Commission, Second District; the City of Albany; Merton E. Lewis, as Attorney-General of the State of New York, and Harold Alexander, as District Attorney of the County of Albany. (Constitutionality of chapter 227, Laws of 1907; price of gas in Albany.)
29. Supreme Court — Columbia County. Jacob Matteo, as Executor of Frank Spadaccine, Deceased, v. Edwin Duffey, Commissioner of Highways, Eugene M. Travis, Comptroller, Mark Kearney et al. (Construction of Highway 1332.)
- Sept. 4. Supreme Court — New York County. Charles Smith v. Edwin Duffey, as Commissioner of Highways of the State of New York. (Injunction.)
21. Supreme Court — Albany County. The People of the State of New York ex rel. Harway Improvement Company v. State Tax Department of the State of New York. (To review determination franchise tax.)
- Nov. 19. Supreme Court — Albany County. In the Matter of the Application of John F. Hylan, as Mayor

- Nov. 19. of the City of New York et al. for a Writ of Prohibition against Thomas E. Finegan, as Acting Commissioner of Education of the State of New York. (Writ of prohibition; public moneys apportioned to New York city under Education Law.)
- Dec. 21. Supreme Court — Albany County. The People of the State of New York ex rel. The Pierce-Arrow Motor Car Company v. Walter H. Knapp, Ralph W. Thomas and John J. Merrill, as Members of State Tax Commission, and the State Tax Commission. (Certiorari; to review tax under article 9-a, Tax Law.)
27. Supreme Court — Albany County. The People of the State of New York ex rel. Baicalo Manufacturing Company v. Walter H. Knapp, Ralph W. Thomas and John J. Merrill, as and Constituting the State Tax Commission. (Certiorari; to review determination re income tax.)

ACTIONS INVOLVING TITLE TO LANDS IN THE FOREST PRESERVE, BROUGHT UNDER THE CONSERVATION LAW

Clinton County — People v. Henry Dupell and ano. (Title; pending.) People v. Joseph Tourville and ano. (Title; pending.) People v. Arthur E. Eneboc. (Title; awaiting decision.) People v. Mary E. Jeffrey. (Title; awaiting decision.) People v. Nina Hart. (Title; awaiting decision.) People v. A. Milton Napier. (Title; awaiting decision.) People v. Myron E. Slater. (Title; awaiting decision.) People v. Emma E. Cook. (Title; awaiting decision.) People v. James Harvey. (Title; judgment for defendant.) People v. Julius Poupore. (Title; judgment for defendant.) People v. Dominick Trombly. (Title; judgment for defendant.) People v. John Ash. (Title; judgment for defendant.) People v. John Covey. (Title; judgment for defendant.)

Delaware County — People v. John L. Lewis and ano. (Title; judgment for defendants.)

Essex County — People v. John Anderson and ano. (Title; pending.) People v. Finch Pruyn and Co., Inc. (Waste; pending.) People v. Enos Estes. (Title; judgment for plaintiff and defendant.)

Franklin County — People v. Santa Clara Lumber Co. (Title and trespass; pending.) People v. Robert D. Douglass. (Title; pending.) People v. Mark L. Paye. (Title; pending.) People v. International Paper Co. et al. (Partition; pending.)

Fulton County — People v. James C. Livingston, Jr. (Ejectment; pending.) People v. Mary Ruff Hine. (Title; pending.) People v. George Baldwin and ano. (Ejectment; awaiting decision.) People v. Henry Fical. (Ejectment; judgment for defendant.)

Hamilton County — People v. Hamlet Whitman. (Ejectment; pending.) People v. Santa Clara Lumber Co. et al. (Involving title and accounting; pending.) People v. Hiram F. Babcock and ano. (Title; pending.) People v. Wm. H. Gifford. (Title; pending.) People v. Charles A. Craig and ano. (Title; pending.) People v. David Brennen. (Title; pending.) People v. Oliver W. Whitman. (Title; pending.) People v. Lowell Fish et al. (Title; awaiting decision.) People v. Indian Lake Mill Co. (Ejectment; judgment for defendant.) People v. Isaac H. Brownell. (Ejectment; State to purchase property.) People v. Elizabeth V. Gooley. (Ejectment; pending.) People v. H. Robert Beguelin. (Ejectment; pending.) People v. Marie A. Bitter et al. (Ejectment; pending.) People v. Robert Glassbrook. (Ejectment; trial commenced.) People v. Robert J. Collier and ano. (Ejectment; pending.) People v. Henry E. Taylor. (Ejectment; pending.) People v. James Sutliff. (Ejectment; pending.) People v. Andrew Symmes. (Ejectment; pending.) People v. Freeland W. Jones. (Ejectment; pending.) People v. Frank Carlin. (Ejectment; pending.) People v. Lucy Blanchard. (Ejectment; pending.) People v. Daniel B. Wright. (Ejectment; pending.) People v. Asa Payne. (Ejectment; pending.) People v. Daniel Sheehan. (Ejectment; pending.) People v. Reuben M. Mick. (Ejectment; pending.) People v. George C. Reardon et al. (Ejectment; pending.) People v. Charles E. Hunt. (Ejectment; pending.) People v.

Freeland W. Jones. (Ejectment; pending.) People v. George C. Reardon. (Ejectment; pending.) People v. Fred Maxim. (Ejectment; pending.) People v. Lucy B. Platt. (Ejectment; pending.) People v. Ezra DeForest. (Ejectment; pending.) People v. Charles W. Anderson. (Ejectment; pending.) People v. Norton Bird. (Ejectment; pending.) People v. Mattie Jones. (Ejectment; pending.) People v. Robert B. Kerr. (Ejectment; pending.) People v. Orrin Lamphere. (Ejectment; pending.) People v. Darius Waldron. (Ejectment; pending.) People v. Beecher Robles. (Ejectment; pending.) People v. John A. Goodro. (Ejectment; pending.) People v. John Blanchard. (Ejectment; pending.) People v. Joseph Grenon. (Ejectment; pending.)

Herkimer County — People v. Harlo C. Young and ano. (Title; judgment for plaintiffs.) People v. James C. Dunbar and ano. (Title; pending.) People v. Clarence L. Fisher et al. (Title; pending.) People v. Henry C. Churchill and ano. (Title; pending.)

Lewis County — People v. James E. Watters. (Title and trespass; pending.)

Saratoga County — People v. Frank H. Cady and ano. (Title; pending.) People v. John H. Andrews. (Title; pending.) People v. Fred Carlton. (Title; judgment for defendant.)

St. Lawrence County — People v. Herbert Ferry and ano. (Title; pending.)

Ulster County — People v. Delia Hardenburgh et al. (Title; pending.) People v. Lawrence Dutcher. (Title; pending.) People v. Atwood Creek et al. (Title; pending.) People v. Jacob Platzoeder. (Title; pending.) People v. Hiram Sprague. (Title; awaiting decision.)

Warren County — People v. Herbert D. Stone et al. (Title; pending.) People v. Geo. W. Black and ano. (Title; awaiting decision.) People v. Thomas F. McPhillips et al. (Title; judgment for defendants.) People v. Wm. R. Waddell et al. (Title; redemption of property.) People v. Simon Lavine et al. (Title; redemption of property.) People v. Lyman Wood and ano. (Title; judgment for defendants.)

APPLICATIONS TO THE ATTORNEY-GENERAL TO
COMMENCE ACTIONS IN THE NAME OF THE
PEOPLE, 1918.

PENDING FROM 1917

- Oct. 11. Application of Burns Brothers Ice Corporation that an action be maintained against the New York Central Railroad Company, to vacate or annul in part certain letters-patent issued on December 26, 1873. Application denied, on the ground that the petitioner had not obtained a title adverse to the State by the erection and use of a dock or wharf built by petitioner's predecessors in title as upland owners prior to the patent to the railroad company, and that the upland owner is entitled to no more than is reasonably adequate to the enjoyment of the right of access to the navigable waters by the erection of a dock or pier and has no authority to erect a superstructure upon such dock or pier for other beneficial use or enjoyment such as an ice house to the detriment of a railroad company which receives from the State a grant of title to the lands under water upon which such ice house has been located.
- Jan. 3. Application of Florence Yocum for dissolution of National Housewife's League. Application pending.
15. Application of William Brunssen for action to dissolve the Confectioners' and Ice Cream Manufacturers Protective Assn. Application denied, upon the grounds that the respondent has not offended against or violated any provision of law or exercised any privilege not conferred upon it by statute.
1. Application of member of Order of Sons of Italy in America. Application pending.
- Febr. 6. Application of Abraham Lewenthal for dissolution of Royal Jewelry Manufacturing Company. Application denied, on the ground that no public interest is involved.

- Feb. 6. Application of Charles W. Miller et al. v. Hudson Coal Company et al. Application pending.

NEW APPLICATIONS

- Jan. 10. Application of Edgar E. Costello, to test the title of George E. Melville to the office of Supervisor of the Town of Corinth. Application denied, on the grounds that the petitioner has failed to make out a *prima facie* case and that he would be unable to sustain the action if one were allowed to be commenced.
26. Application of Edwin A. Fiske v. Edward F. Brush, as intruding into and usurping office of Mayor of Mount Vernon. Application granted.
- Feb. 2. Application of Albert L. Hall to test the title of Clarence L. Fessenden to the office of Health Officer of the City of Fulton. Application denied, on the grounds that the respondent had been duly appointed Health Officer, as provided by the charter of the city, and that such city charter would prevail over the general law in relation to such appointment, and his title to the office was held to be legal and sufficient.
13. Application of Henry Kahn v. State Silk Company. Application withdrawn.
- March 1. Application of Israel Koretzky v. Electric Case Company, Inc. Application pending.
3. Application of Edward B. Whaley to determine title to office of Superintendent of Highways of the town of Patterson, Putnam County. Application granted.
30. Automatic Electric Company, Application for dissolution. Application granted.
- April 1. Application of Ernest G. Draper v. American Creosoting Company. Application granted.
16. Application of John S. Dowling to test the title of John J. Shea to the office of Trustee of Third Ward of the village of Hoosic Falls. Application denied, on the grounds that the respondent was eligible to hold the office and was clearly elected thereto and

- April 16. should not be disturbed in his employment of the incumbency of the office.
25. Application of Clark Allis v. William D. Barron, Burton H. Wade and the Associated Buying Corporation. No action taken by applicant after filing of application.
- May 4. Application of Clara C. Fuller, et al., to test title of James W. Tompkins to office of Chief of Police of Ossining. Application granted.
20. Application of Dunn Printing Works v. Buffalo Printing Ink Works. Application granted.
20. In re Commonwealth Finance Corporation. Application granted.
27. Application John M. Pugh, et al., v. Peter E. Hoffman, to determine right of petitioners to hold office of trustees of village of Whitesboro, Oneida County. Application granted.
- June 10. Application of Alexander G. Donnelly v. Quasapic Company, Inc. No further action taken by applicant after filing petition.
- Aug. 29. Application of John F. Griffin v. Lord & Company. Application abandoned.
- Oct. 10. Application of John D. Langham v. James A. Balcom. Application denied, on the ground that the respondent was clearly elected by a majority of at least sixty-one over the petitioner, and was clearly entitled to hold the office.
- Oct. 11. Application of Estelle B. Miller v. Miller, Tompkins & Company, Inc. Application denied, on the ground that there is no public interest involved except a possible evasion of taxation and that such evasion does not justify the remedy sought.
14. In the Matter of the Application of J. William Newbery v. Officers and Directors of The Williams Aircraft Corporation. Application pending.
14. Application of Abraham Rosenblum v. Empire Onion Storage Company. Application discontinued.

- Nov. 2. Application of Maurice Goldman v. Onyx Mills Company, Inc. No further action by Petitioner after filing of petition.
- Oct. 8. Application of Vito Peseia v. Society Holy Mary of Quasano. Application pending.
(For opinions in these applications see page 223 of report.)

OPINIONS

OPINIONS

ARTICLE 1, SECTION 4, CLAUSE 1, AND ARTICLE 1, SECTION 2, CLAUSE 4, UNITED STATES CONSTITUTION — ACT OF CONGRESS, AUGUST 8, 1911,, CHAPTER 5 — CHAPTER 890, LAWS OF 1911 — CHAPTERS 797 AND 799, LAWS OF 1917 — REPRESENTATIVES IN CONGRESS — VACANCIES IN OFFICE SUBSEQUENT TO CHANGE IN BOUNDARIES OF DISTRICT — ELECTION IN NEW DISTRICT.

STATEMENT

The Governor of the State of New York has been requested to call special elections to fill the vacancies in the House of Representatives caused by the resignations of the following members: John J. Fitzgerald, 7th District; Daniel J. Griffin, 8th District; Murray Hulbert, 21st District, and Henry Bruckner, 22nd District. These representatives were elected in 1916 in their respective districts as apportioned by the legislature of the State of New York under Chapter 890 of the Laws of 1911. In 1917 the legislature, by Chapters 797 and 799 amended Chapter 890 of the Laws of 1911, changing the boundaries of certain congressional districts among which were included the 7th, 8th, 21st and 22nd.

INQUIRY

Where the boundaries of a congressional district have been changed and subsequently a vacancy occurs, shall the election be held in the districts newly created, or within the boundary lines of the old district?

OPINION

The United States Constitution, Article 1, section 4, clause 1, provides that:

“The times, places, and manner of holding elections for senators and representatives shall be prescribed in each state by the legislature thereof; but congress may at any time, by law, make or alter such regulations, except as to the place of choosing senators.”

The question arises whether, after a representative is elected by the people of a district before a change of its boundaries, a

vacancy caused by resignation or otherwise, can be filled by the people within the boundaries of the new district.

Originally the states were at liberty to choose whether representatives should be elected at large or by districts, but by an act of Congress, June 25, 1842, it was provided that representatives should be elected by districts, and in the last apportionment act of Congress, adopted August 8, 1911, by section 3 thereof it is directed:

“That in each state entitled under this apportionment to more than one representative, the representatives to the sixty-third and each subsequent congress shall be elected by districts composed of contiguous and compact territory and containing as nearly as practicable an equal number of inhabitants. The said district shall be equal to the number of representatives to which such state may be entitled in congress, no district electing more than one representative.”

Limited only, therefore, by article 1, section 4, clause 1, of the United States Constitution, and section 3 of the act of Congress of August 8, 1911, the legislature of this state had plenary power to determine by what districts the elections should be made and to change the boundaries of those districts at any time, and pursuant to such power and authority, the legislature did, by chapter 797 and 799 of the Laws of 1917, change the boundaries of certain congressional districts among which were included the districts in question.

There seems to be no constitutional provision and no act of Congress to prevent the Legislature after the establishment of a district to alter or change the boundaries thereof and the time, place and manner of determining the boundaries and holding the elections are within the discretion of the State Legislature.

The boundaries of the district in question were not only changed but the act so changing them took effect immediately, and also by section 3 thereof it was provided that:

“All acts or parts of acts inconsistent with this act are hereby repealed.”

Therefore upon the taking effect of these acts, the old congressional districts ceased to exist and there were none other than those limited by these later acts of the Legislature.

Article 1, section 2, clause 4 of the United States Constitution provides that:

“When vacancies occur in the representation from any State, the executive authority thereof shall issue writs of election to fill such vacancies.”

In issuing writs of election to fill the vacancies caused by the resignations of Representatives Fitzgerald, Griffin, Hulbert and Bruckner, such writs must run to the congressional districts now in existence. The districts by which these representatives were elected were created by the apportionment under chapter 890 of the Laws of 1911, and were sustained by such chapter and ceased to exist when the provisions of law creating such districts were repealed.

Section 4 of chapter 5 of the Sixty-second Congress of date of August 8, 1911, further provides that:

“The representatives thereof shall be elected from the districts now prescribed by law until such state shall be redistricted as herein prescribed.”

This section of the United States statutes clearly indicates that the authority rests with the Legislature to dedistrict or change at any time the boundaries of an existing district, and that any representative elected subsequent to such change, whether for a full term or to fill a vacancy, shall be elected from the districts as changed. By the change of districts and the election of representatives thereafter from the districts as changed, State representation in Congress is corrected and maintained forthwith in accord with the intent of the Federal Constitution and the acts of Congress governing the election of representatives.

A representative in Congress is not a local officer and is not recognized as representing any subdivision of the State. He is a United States officer and the Constitution treats him as a representative of the State and not merely of a district thereof. This is indicated by Article 1, section 2, clause 4 of the Constitution, above quoted, which refers to a vacancy occurring in the repre-

sentation from any State. The division of a State into congressional districts was a regulation of the manner of elections and not of the extent of representation.

To attempt to hold an election for the purpose of filling these vacancies within the boundaries of the old districts would result in utter confusion and complications, unless preceded by adequate legislation, for the reason that since the establishment of the boundary lines of the old districts, the boundaries of election districts in the city of New York have been changed to conform to the assembly and senatorial apportionment. I am advised that of the new election districts there are a considerable number which are divided by the boundary lines of the old congressional districts.

In addition to the reasons above cited, for the calling of elections to fill these vacancies in the 7th, 8th, 21st and 22d congressional districts as bounded and described by chapters 797 and 799 of the Laws of 1917, ample precedent exists in the cases of *Perkins v. Morrison* and *Poole v. Skinner*, contested election cases in the House of Representatives, the first occurring in the 31st Congress and the second in the 48th Congress.

I therefore reach the conclusion that the special elections to fill the vacancies in the House of Representatives caused by the resignations of the members from the 7th, 8th, 21st and 22nd congressional districts should be held within the boundaries of such districts as fixed and determined by chapter 890 of the Laws of 1911, as amended by chapters 797 and 799 of the Laws of 1917.

Dated January 23, 1918.

MERTON E. LEWIS,
Attorney-General.

To Hon. CHARLES S. WHITMAN, *Governor, Albany, N. Y.*

BANKING LAW — INVESTMENT COMPANIES — BUSINESS CORPORATIONS LAW.

The following object:

“To lend money for itself or as agent on bonds secured by mortgage on real property or upon personal property,

and to lend money and make advances from time to time on bonds, secured by mortgages for future advances on real property or upon personal property. To lend money to be secured by bonds and mortgages upon real estate in the city of New York, and to take such mortgages in the name of the company, or of such trustee or trustees as its board of directors may appoint and designate for the purpose, by an instrument in writing to be recorded in the office of the Register of the County of New York or any other county designated by its board of directors, and to issue bonds or debentures against such mortgages to an amount equal to the amount loaned, upon the security of such mortgages, in such denominations as the board of directors may, by resolution duly passed, provide,"

in a certificate of incorporation drawn pursuant to the provisions of the Business Corporations Law, belongs to an investment company provided for by the Banking Law and incorporation should be under the Banking Law.

INQUIRY

The Secretary of State asks for an opinion as to whether or not the above statement of purposes is such as to include the powers of an investment company as defined by the Banking Law.

OPINION

A corporation organized under the Business Corporations Law may not have for its purpose those provided for by the Banking Law. This prohibition is found in section 2 of the Business Corporations Law which provides in part as follows:

"Three or more persons may become a stock corporation for any lawful business purpose or purposes other than a moneyed corporation or a corporation provided for by the banking, the insurance laws by making, signing, acknowledging and filing a certificate * * *."

Article VII of the Banking Law provides for the incorporation of what are known as investment companies, and section 293 of that law provides that such a corporation, in addition to the

powers conferred by the General and Stock Corporations Laws shall, subject to the restrictions and limitations contained in said Article VII, have the following powers:

“1. To sell, offer for sale or negotiate bonds or notes secured by deed of trust or mortgages on real property situated in this state or outside of this state, or choses in action owned, issued, negotiated or guaranteed by it; to advance money upon the security of such bonds, notes or choses in action; to purchase or otherwise acquire such bonds, notes or choses in action and to pledge them to secure the payment of collateral trust bonds or notes; to sell or otherwise negotiate such collateral trust bonds or notes.

“2. To receive money or property in installments or otherwise from any person or persons, with or without an allowance of interest upon such installments; to enter into any contract or undertaking with such persons for the withdrawal of such money or property, at any time, with any increase thereof, or for the payment to them or any person of any sum of money at any time, either fixed or uncertain.”

The proposed corporation, among other things, states that one of the purposes for which it is incorporated is

“to lend money * * * on bonds secured by mortgage on real property * * * and to lend money * * * from time to time on bonds secured by mortgages for future advances on real property, * * *. To lend money to be secured by bonds and mortgages upon real estate in the city of New York * * *.”

Said section 293 of the Banking Law provides that investment companies may

“sell * * * bonds or notes secured by deed of trust or mortgages on real property situated in this state * * *.”

and may

“advance money upon the security of such bonds * * *.”

The proposed object which I have quoted comes, in my opinion, within the provisions of said section 293 of the Banking Law.

This appearing, it is improper to have it in a corporation which proposes to incorporate under the Business Corporations Law.

Dated January 23, 1918.

MERTON E. LEWIS

Attorney-General.

To Hon. FRANCIS M. HUGO, *Secretary of State, Albany, N. Y.*

CHAPTER 2534, UNITED STATES STATUTES — ARTICLE 2, SECTION 1, CONSTITUTION, STATE OF NEW YORK — QUALIFICATIONS OF WOMEN VOTERS — CITIZENSHIP — NATURALIZATION.

An American born woman married to a foreigner, residing in the State of New York, cannot regain her citizenship so long as the marital relations legally exist.

Citizenship is a requisite qualification for the exercise of suffrage.

INQUIRIES

1. Can an American-born woman married to an unnaturalized foreigner residing in the State of New York obtain her own naturalization although her husband does not choose to be naturalized?

2. Can the said woman cast her vote on the strength of her American birth without being naturalized although married to the said unnaturalized foreigner?

OPINION

The Constitution of the State of New York gives to every citizen the privilege of suffrage upon the condition that such person has been a citizen for ninety days, an inhabitant of the State for one year next preceding an election, for the last four months a resident of the county and for the last thirty days a resident of the election district in which he or she may offer his or her vote, providing, however, that a citizen by marriage shall have been an inhabitant of the United States for five years.

A woman born in the United States expatriates herself by contracting marriage with a foreigner. Chapter 2534, section 3, United States Statutes, enacted March 2, 1907, provides that "any American woman who marries a foreigner shall take the nationality of her husband."

This act was declared constitutional by the United States Supreme Court in *re Mackenzie v. Hare, et al*, 239 U. S. Rep. 299. Mr. Justice McKenna, in delivering the opinion of the court, said:

“ The identity of husband and wife is an ancient principle of our jurisprudence. It was neither accidental or arbitrary and worked in many instances for her protection. There has been it is true, much relaxation of it but in its retention, as in its origin, it is determined by their intimate relation and unity of interests, and this relation and unity may make it of public concern in many instances to merge their identity, and gives dominance to the husband. It has purpose, if not necessity, in purely domestic policy; it has greater purpose and, it may be, necessity, in international policy. And this was the dictate of the act in controversy. * * * *

It may be conceded that a change of citizenship cannot be arbitrarily imposed, that is, imposed without the concurrence of the citizen. The law in controversy does not have that feature. It deals with a condition voluntarily entered into, with notice of the consequences. We concur with counsel that citizenship is of tangible worth, and we sympathize with plaintiff in her desire to retain it and in her earnest assertion of it. But there is involved more than personal considerations. As we have seen, the legislation was urged by conditions of national moment. * * * * The marriage of an American woman with a foreigner has consequences of like kind, may involve national complications of like kind, as her physical expatriation may involve. Therefore, as long as the relation lasts it is made tantamount to expatriation. It is as voluntary and distinctive as expatriation and its consequence must be considered as elected. This is no arbitrary exercise of government. It is one which, regarding the international aspects, judicial opinion has taken for granted would not only be valid but demanded.”

The above ruling of the United States Supreme Court has conclusively determined the status, as to citizenship, of a woman born under the jurisdiction of the United States and married to a native of a foreign country who resided in the United States.

Expatriation may be a heavy penalty imposed for the privilege of contracting marriage with a foreigner, but when viewed from the standpoint of our national welfare it becomes the dictate of necessity.

Under the law a woman not only loses her citizenship by contracting marriage with a foreigner but she cannot regain it except through naturalization of her husband or a legal termination of the marital relations. Said chapter 2534, section 3, United States Statutes, further provides:

“At the termination of the marital relation she may resume her American citizenship, if abroad, by registering as an American citizen within one year with a Consul of the United States, or by returning to reside in the United States, or, if residing in the United States at the termination of the marital relation, by continuing to reside therein.”

In conclusion I hold

1. That an American-born woman married to a foreigner, residing in the State of New York, cannot regain her citizenship so long as the marital relations legally exist.

2. That inasmuch as citizenship is a requisite qualification for the exercise of suffrage, a woman married to a foreigner cannot vote until her husband has been naturalized, or she restored to citizenship upon the legal termination of the marital relations as provided in chapter 2534, section 3 United States Statutes.

Dated: January 26, 1918.

MERTON E. LEWIS,
Attorney-General.

TO BOARD OF ELECTIONS OF CITY OF NEW YORK, *Municipal Building, New York City.*

VETERANS' PENSIONS. CHAPTER 438, LAWS OF 1916.

Honorably discharged veterans of the Civil War who have been employed for ten consecutive years or upwards, immediately preceding their attaining the age of seventy years, in what is known as seasonal work upon the canals, are eligible to the benefits provided by chapter 438 of the Laws of 1916.

INQUIRY

Are veterans employed in the Department of Public Works who have rendered services for the State each and every season

for ten years or more before they arrive at the age of seventy years, entitled to be placed upon a retired list and given an annual pension of one-half of the salary or wages paid them during the last year of their services for the State?

OPINION

It appears from your inquiry that there are a number of employees of the State doing canal work in what is known as the "seasonal" class. These employees are appointed at the opening of canal navigation, on or about May 1st each year and serve until the season closes, about December 1st. From that time until the opening of operations in the following year, they are laid off, so that during the closed period they do not render any service for or receive any compensation from the State. There are a number of honorably discharged veterans of the civil war who are employed in such seasonal work and the question now arises, are such veterans of the civil war who have worked in that manner for ten years or more, entitled to be retired upon reaching the age of seventy years and to receive from the State a pension amounting to one-half of their compensation for their last year of service.

Chapter 438 of the Laws of 1916, being an amendment of the Civil Service Law, and forming section 21-a thereof, provides in substance, that every honorably discharged soldier, sailor or marine in the civil war, "who shall have been employed for a *continuous* period of ten years or more in the civil service of the State of New York, and who shall have reached the age of seventy years," may upon his own request be retired from employment, and thereafter during his life be entitled to receive from the State, through the department or institution which employed him at the time of his retirement, a sum which shall amount to one-half the salary or wages paid to him in the last year of his employment, not however, to exceed the sum of one thousand dollars per annum.

I have held, as well as my predecessor, General Woodbury, held, that the ten years of service must have been continuous for a term of ten years immediately prior to the veteran's retirement. I have not held that the ten years continuous service must have

been every day or even every month of the ten years immediately preceding his retirement. The employment should be such portion of very one of the ten years immediately preceding his retirement as the State might or did require his services. It is a fact well known to all of us that there are several branches of the State government in which the employees cannot be given employment during the winter season and they are laid off during that time without compensation, but if the employee holds himself in readiness to resume his work as soon as the season opens, it would be only fair and equitable that his labor as such seasonal employee should receive the same consideration, so far as the benefits of this Act are concerned, as the employee who works the entire year and received wages for the entire year. An employee who only works eight months in a year is only paid for that time and his annual compensation is proportionately less; and, as the pension is based upon his last year's compensation, it will also be proportionately less. I think it is fair to assume that the legislature did not intend to discriminate unjustly against the seasonal employee by using the term "for a continuous period of ten years." The purposes of the act should be considered in its interpretation. This statute is along the same general line found in various other statutes of the State, to wit: To give preference to the old veterans in civil positions to which they are eligible; to assist them in their declining years; and to place them above penury and want in the weakness of old age, without subjecting them to the humiliation of seeking public charity or being placed upon a level with the ordinary pauper, all out of consideration for the services they rendered our country in the days of civil strife, and for ten years' faithful service to the State. While the Legislature has required ten years' continuous service, it would be giving it a very narrow construction to hold that the veteran must have rendered services every day or every month during that period. To give it such a construction would exclude almost every soldier, sailor or marine from its benefits, as there would be very few, if any, who could show ten years of constant service without some slight break in the continuity thereof; but where the party has been for ten years immediately preceding his application for retirement, employed the best part of each year by the State, he

has sufficiently met the requirements of the statute to render him eligible for a pension.

I held in an opinion to the Assistant Corporation Counsel of the City of Albany under date of December 17, 1917, that a street sweeper who had been employed by the city for seventeen years prior to the application, but whose work was suspended almost entirely during the winter months, came fairly within the terms of the act and was entitled to a pension as provided therein.

Season positions are recognized by the State Civil Service Commission and seasonal appointees in the competitive class are made subject to the provisions of the rules of the Commission.

It was held by Circuit Court Judge in *re* Schneider, 164 Federal Reporter 335, that the words "resided continuously within the United States for at least five years," in the Naturalization Act was not to be used literally as requiring the applicant to remain at all times physically within the jurisdiction of the United States. In that case the applicant had enlisted in the navy and was absent from the United States a large portion of the five years. The Court said, at page 336:

"The word 'continuously' which is not found in the Act of 1802, cannot be construed literally; else a resident of New York would lose his right if he paid a visit to Europe at any time during the first four years of his residence, or spent a day in Jersey City within the year immediately preceding the day of filing his petition. The use of the word may be to prevent any intermediate change of domicile during the five years."

I take it, therefore, that the words requiring a continuous employment for a term of ten years should not be construed literally as requiring the veteran to have been employed every day or every month during the whole period of ten years immediately preceding his application. The employees under consideration worked the larger part of each year for the last ten years prior to their retirement and the only reason they did not work the omitted portions of the year was because they were laid off on the closing of the canals.

I think the old veterans are entitled to a fairly liberal construction of the statute and I therefore advise you that all such seasonal employees whose services have continued during the open season upon the canals for each of the ten years immediately preceding their application for retirement, should be allowed and paid through your department a sum equal to one-half of their salaries or wages during the last year of their service, but not to exceed the sum of \$1,000 per annum.

Dated, January 28, 1918.

MERTON E. LEWIS,

Attorney-General.

To Hon. W. W. WOTHERSPOON, *Superintendent of Public Works,*
Albany, N. Y.

NEW YORK GUARD — COURTS MARTIAL — JURISDICTION OVER CIVILIANS.

INQUIRY

A civilian discharged a pistol at a New York Guard sentry on duty guarding the Barge Canal. He has been arrested by members of the New York Guard. Is he amenable to the jurisdiction of a court martial?

OPINION

Section 14 of the Military Law (as amended and renumbered by L. 1917, C. 644) provides that the Articles of War of the United States army shall be in force at all times as to the land and naval forces of the State in so far as consistent with the Military Law and the regulations issued thereunder.

Article XII of the Articles of War provides that general courts martial shall have power to try any person subject to military law for any crime or offense made punishable by these articles, and any other person who by the law of war is subject to trial by military tribunals. Section 130 of the Military Law provides that military courts of the state shall be constituted like and have cognizance of the same subjects and possess like powers, except as to punishments, as similar courts provided for by the laws and regulations governing the army of the United States. Article II of the Articles of War defines persons subject to Military Law.

Speaking briefly, this definition may be said to include soldiers of the United States, retainers to the camp, and persons accompanying or serving with the armies of the United States in the field or without the territorial jurisdiction of the United States, persons under sentence adjudged by courts martial, and persons admitted into regular army soldiers' home. It is obvious that this definition cannot apply in the case of the New York Guard. But we might paraphrase it in holding that persons subject to Military Law under the State are members of the Militia in active service and in case of actual warfare, insurrection, riot, etc., persons accompanying and serving with the Militia, also persons under sentence lawfully adjudged by courts martial (whose terms of enlistment may have expired). It is perfectly clear that this definition cannot be held to include civilians not directly connected with the New York Guard. The provision of the articles of War with respect to retainers to the camp, etc., come down from the original military code of the United States of 1775, which derived it from a corresponding British article. It is held to include such persons as officers' servants, newspapers correspondents, telegraph operators, etc., civilians attending the army and actually in the employment and service of the government. The article is very strictly construed and it might be said that at present there is really nobody with the New York Guard whose case would be parallel to that of the retainers to the camp, etc., defined in subdivision D of Article II of the Articles of War.

It is clear then that a general court martial under the first part of article XII has no power to try the civilian in question as he is not a person subject to Military Law. The question remains whether he can be brought within the term "any other person who by the law of war is subject to trial by military tribunals." The "Law of war" as used in Article XII means Martial Law. Martial Law ordinarily only holds in the actual theatre of warfare, although some times in cases of riot or insurrection it is declared to exist at the scene of the trouble. Martial Law has been defined to mean really nothing but the will of the commanding military officer. But it is not necessary for us to go into a definition of Martial Law, or to consider the jurisdiction of courts martial under it, for it is an obvious fact that the State

of New York is not at present under Martial Law, and that the Barge Canal is not the scene of hostilities.

I do not think that a civilian, even though he may shoot at a soldier doing his duty, is one of the persons defined in Article XII of the Articles of War unless he commits that act in a place where Martial Law is in control.

The jurisdiction of special courts martial and summary courts martial is even narrower than that of general courts martial, and it is not necessary for me to consider the question of whether they could possibly have jurisdiction.

In *People ex rel., Frey vs. The Warden, etc.*, 100 N. Y. 20, the Court of Appeals said: (page 25.)

“Courts martial and delinquency courts are tribunals of special and limited powers, having jurisdiction only of offenses against military discipline committed by persons belonging to the particular branch of the service for which such courts are organized.”

The *Cyclopedia of Law and Procedure* says:

“The jurisdiction of courts martial is special, and is limited to military offenses and persons connected with the military service. Since courts martial are executive agencies they cannot assume the functions and jurisdiction properly belonging to the civil courts, except where martial law has been established.” (27 Cyc. 498.) See also *Smith vs. Shaw* 12 Johns, 257.

My conclusion is that the civilian mentioned in the inquiry is not amenable to the jurisdiction of a court martial but that he should be delivered over to the civil authorities and prosecuted by the district attorney in the civil courts.

Dated: January 29, 1918.

MERTON E. LEWIS,
Attorney General.

To: Brig. Gen. CHARLES H. SHERRILL, *The Adjutant General,*
Albany, New York.

SELECTIVE SERVICE CLASSIFICATIONS — CLASS V, SUBDIVISION (H)— PERSONS MORALLY UNFIT TO BE SOLDIERS.

A person who has been convicted of felony, etc., cannot waive deferred classification but must be placed in Class V. A person will be regarded as having been "convicted" of felony if adjudicated guilty of a crime punishable by a term in State prison, whether sentenced to State prison, penitentiary, reformatory, or whether merely fined or given a "suspended sentence."

INQUIRY

What is the meaning of subdivision (h) of Rule XII of the Selective Service Regulations, section 79, with respect to persons found guilty of crime but not sentenced to State prison?

OPINION

The regulation referred to provides exemption of

"A person shown to have been convicted of any crime which, under the law of the jurisdiction of its commission, is treason, felony or an infamous crime."

The purpose of this provision is to protect the personnel of the army from contamination, and to keep out of the army felons and traitors. The suggestion that a registrant who has been convicted of felony, treason, or an infamous crime may waive deferred classification and be classified in Class I is obviously absurd. A man may waive a privilege but not a disability. Deferred classification in general is a privilege, but classification under subdivisions (g) and (h) of Rule XII is a matter depending upon a state of facts and not at all subject to the will of the registrant. A stranger who might seek to gain admittance to the clubhouse of an exclusive club, and who was stopped by the doorman as not being a member, would be considered a humorist if he offered to waive his disability. Subdivision (h) of Rule XII was made a part of the Selective Service Regulations for the same reason that clubs have rules restricting the admission of strangers to their clubhouses.

The question is raised as to what constitutes conviction of a crime which, under the law of New York, is treason, felony or an infamous crime. Treason is defined in section 2380 of the Penal Law and consists of levying war against the people of the State, combining to usurp the government of the State, or adhering to the enemies of the State in certain defined ways. A felony,

according to section 2 of the Penal Law, is a crime which is or may be punishable by death or imprisonment in a State prison. The term "infamous crime" is not defined in our statute, but the courts have defined it as "an offense implying such a dereliction of moral principle as carries with it a conviction of a total disregard of an oath."

People v. Parr, 42 Hun, 313.

The fact that one convicted of a crime punishable by imprisonment in a State prison is actually punished by imprisonment in a penitentiary or in a State reformatory does not render him any the less a felon, disqualified under subdivision (h) of Rule XII.

The question has been raised as to the status of one who has been found guilty of a felony and upon whom sentence has been suspended. In *People v. Fabian*, 192 N. Y. 443, the case was considered of a man who had been found guilty of a felony and upon whom sentence had been suspended who registered and voted at an election. The Election Law provided that:

"No person who has been convicted of a felony shall have the right to register for or vote at any election unless he shall have been pardoned and restored to the rights of citizenship."

The Court of Appeals held that for the purpose of construing the election law a man would not be considered to have been *convicted* of a crime unless judgment had been pronounced against him, and that since sentence had been suspended in the case of the defendant and no judgment pronounced against him, he could not be deemed to have been *convicted*. But in the more recent case of *Matter of Lewis vs. Carter*, 220 N. Y. 8, the Court of Appeals practically limited the *Fabian* case to its facts, saying, *inter alia*:

"The word 'convicted' or 'conviction' is of equivocal meaning. It may mean the adjudication of guilt whether by plea, finding or verdict. It may mean the adjudication and the judgment or sentence."

The court went on to hold that, within the meaning of the penal law fixing sentences of second offenders, a person who had once

been adjudicated guilty of a felony and who was again adjudicated guilty of a felony should be treated as a person who had "been convicted" of a felony for the second time, even though sentence might have been suspended upon him after his first trial. I am inclined to think that for the purpose of construction of subdivision (h) of Rule XII of the Selective Service Regulations we should follow the decision of *Matter of Lewis vs. Carter* rather than that of the *Fabian* case, for the following reasons: In the *Fabian* case the question was whether a man had lost the right of franchise as one of the incidents of conviction of felony. Having been convicted of felony he was subject to punishment and the loss of his franchise was part of the punishment. The trial judge suspended sentence as far as concerned any punishment by imprisonment or fine, and it might be reasonably argued that this suspension should apply equally well to that part of the punishment consisting of loss of franchise. In the case of *Lewis vs. Carter*, the court was considering the interpretation of a statute fixing the sentences to be imposed upon certain kinds of criminals and was making the distinction between first and second offenders. It unequivocally held that a man who had been adjudicated guilty of a felony once and was later adjudicated guilty of another felony was a second offender, even though sentence had been suspended in the first instance; the theory being, apparently, that a man who has been found guilty of felony thereby takes the status of a convict or felon whether punished by fine or imprisonment or not. Subdivision (h) of Rule XII of the Selective Service Regulations was enacted for the purpose of protecting the army against contamination and not for the purpose of permitting felons to demand special privilege in exemption from draft. So we are interpreting not a provision of law which deprives a person "convicted" of certain privileges but a provision which classifies persons "convicted" as different from those who have not been convicted. We are interpreting a section which is not like the statute under consideration in the *Fabian* case, but which is like the statute under consideration in *Lewis vs. Carter*.

At various times in the past decade different judges in New York, who have had before them for sentence young men found guilty of crime, have offered to suspend sentence upon those young

men on condition that they would enlist in the army or the navy. In each case there has been immediate protest from the military authorities and the applicant has been refused enlistment, the War Department and the Navy Department continually taking the stand that the army and navy are not penal institutions and that the members of the army and navy should not be subjected to contact with criminals. They have regarded the convicts in each case as criminals, notwithstanding the fact that no sentence had been imposed.

Taking this attitude of the War and Navy Departments into consideration, together with the conclusions of the courts mentioned, I am of the opinion that a person who has been adjudicated guilty of any crime punishable in the State of New York by death or imprisonment in a State prison (whose adjudication of guilt has not been reversed) should be classified in Subdivision (h) of Class V under Rule XII of the Selective Service Regulations, whether he was sentenced to State prison, to a penitentiary or a reformatory, or whether he was merely fined or even given a suspended sentence.

Dated: January 31, 1918.

MERTON E. LEWIS,
Attorney-General.

To Brig. Gen. CHARLES H. SHERRILL, *The Adjutant General,*
Albany, New York.

LIEN LAW. PREFERENCE.

A lien for either labor performed or material furnished for a public improvement, pursuant to the provisions of sections 5 and 12 of the Lien Law, has precedence over the lien of a levy made under a judgment obtained against the contracting corporation upon a debt not connected with the improvement, prior to the filing of a lien for labor or material or an assignment of the moneys due or to grow due thereon.

INQUIRY

To what extent should a levy or notice of a levy upon public funds, under a judgment recovered upon a claim or demand against the contractor, not connected in any way with the public improvement, be recognized in the paying out of the funds of the

State appropriated for such public improvement where there are subsequent liens filed against such funds, or the same have been assigned to a claimant for labor or material?

OPINION

On December 24, 1917, J. D. Patton, Sheriff of the County of Albany, filed with the Comptroller a notice of a judgment in favor of The United States Radiator Corporation against P. F. Kenny Co., of \$471.27, and claimed to levy upon all moneys due and to grow due upon a contract made between the State of New York by the State Armory Board, and the said P. F. Kenny, for plumbing and drainage at the Yonkers Armory. Subsequent to that date, and on the 7th day of January, 1918, an assignment of all moneys due or to grow due upon such contract, was made by P. F. Kenny Co. to one Thomas S. Moran, which assignment was duly approved by the Armory Commission and the same was duly filed with the Comptroller pursuant to the provisions of section 15 of the Lien Law. The Comptroller has received a certificate amounting to \$2,272.17 payable to Thomas S. Moran, as such assignee, and desires to be advised as to what extent the levy or notice of levy should be recognized in the payment of such moneys.

The Lien Law was enacted for the purpose of saving and protecting the two classes which contribute to the construction of property, to wit: The laborer and the material man. Without the cooperation of both classes, real property or public work would remain unimproved and of no increased value. In order to protect and safeguard the rights and interests of both, the legislature many years ago decided that the two classes should have liens upon the real property or public improvement to the extent to which they had respectively contributed to the augmented value of the premises. It was deemed equitable and fair that the laborer who had contributed to such augmented value by his brawn and muscle, and the material man who had contributed with his property should be preferred if he so desired by a lien upon such premises over the lien of other creditors who had extended credit to the owner or contractor without contributing anything towards its increased value, and generally without anticipation of any increase

in value except as against the liens of secured creditors whose claims were upon record.

Under section 3 of the Lien Law the labor or material man is given a lien upon the real property improved, or to be improved, and upon such improvement from the time of filing the notice of lien as provided by section 9. Under section 5 of the same law the same parties are given a lien upon the moneys and public funds applicable to the construction of the improvement to the extent of the amount due or to become due on the contract, by filing a notice of lien with the head of the department or bureau having charge of the work and with the Comptroller in the case of a State contract as provided by section 12 of the Lien Law.

There would be no difficulty in this matter if the liens were upon real property which has been improved under the provisions of section 3 of the Lien Law, for section 13 of the Lien Law specifically provides:

“A lien for materials furnished or labor performed in the improvement of real property shall have priority over a conveyance, judgment or other claim against such property not recorded, docketed or filed at the time of the filing of the notice of such lien, * * * over the claim of a creditor who has not furnished materials or performed labor upon such property; * * * over an attachment hereafter issued or a money judgment thereafter recovered upon a claim which in whole or part, was not for material furnished, labor performed or moneys advanced for the improvement of such real property; and also over any claim or lien acquired in any proceedings upon such judgment.”

While this section by its language seems to apply solely to liens upon real property filed pursuant to the provisions of section 3, I cannot avoid the conclusion that it was intended to apply to liens against public funds, as well. The whole scheme of the Lien Law is based upon the idea of giving the labor and material man the first liens upon improvements made by their labor or property.

The statutory provisions for the protection of parties who perform work upon, or furnish material for a public improvement, are just as sacred and entitled to just as much protection and

consideration as those contributing to the construction of private property. While a close and narrow construction of section 13 might exclude lienors under section 5, for labor performed or material furnished towards the construction of a public improvement, I am inclined to follow the rule laid down in section 23 of the same act which reads in part as follows: "This article is to be construed liberally to secure the beneficial interests and purposes thereof."

I do therefore hold that a lien or assignment of a contract when made as provided in the Lien Law, will take preference and priority over the lien of a judgment recovered upon a debt against the contractor which was not for material furnished or labor performed.

There is still another phase of this subject that is entitled to consideration. The attempted levy under the judgment of the United States Radiator Corporation, is not sufficient to hold the funds as against subsequent liens of laborers or material men, or assignees of the contract. An actual levy upon personal property is necessary to bind and hold the property.

To constitute a valid levy upon personal property, the goods or property must be present and subject to the control of the officer. It is not necessary that he should always take manual possession of the property, but there must be an open assertion of right by virtue of the process in respect to goods within his power, or there must be an acknowledgment or claim by the judgment debtor of his title to the property levied upon and the act of levy must be fully asserted and understood.

Baker v. Binninger, 14 N. Y. 270, Green v. Burke, 23 Wend. 490, and numerous other cases.

Assuming that there had been no lien perfected or assignment of the moneys due upon the contract made by P. F. Kenny Co. on Dec. 24, 1917, at the time of the alleged levy by the Sheriff under the execution, it did not create a lien against the funds held for the public improvement. The money was not in the hands of the Comptroller upon whom the notice of levy was served. The balance of the money remaining unpaid upon the contract was not and could not have been seized or taken possession of by the sheriff, and the most that can be said for the attempted levy

is that the Comptroller was notified of an outstanding judgment against the contractor and that the Sheriff held an execution for its collection.

The judgment creditor has a remedy under article 6 of the General Corporation Law for sequestration of the property of the P. F. Kenny Co., a corporation, but he did not obtain a lien upon the funds in the State treasury appropriated for the work mentioned in the contract hereinbefore stated.

I am therefore of the opinion that the notice of levy served upon the Comptroller by the Sheriff of Albany County under an execution issued upon the judgment of the United States Radiator Corporation against P. F. Kenny Co. should not be recognized by the Comptroller in the adjustment of claims against the funds applicable to the payment of the work mentioned in the contract between the State and P. F. Kenny Co. relating to the plumbing and drainage at Yonkers Armory.

Dated February 14, 1918.

MERTON E. LEWIS,
Attorney-General.

TO HON. EUGENE M. TRAVIS, *State Comptroller.*

ELECTION LAW; EXPENSES OF LOCAL BOARDS.

A board of elections in a county having a population of less than ninety thousand and which does not contain within its boundaries at least three cities of the third class, has no authority to bind the county to an expenditure in excess of fifteen hundred dollars per year for clerk hire, including stenographer.

INQUIRY

Has the Board of Elections of the county of Cayuga the right to employ a stenographer and clerical assistance at an expense to the county in excess of fifteen hundred dollars per year?

OPINION

It has been found necessary by the Board of Elections of the county of Cayuga to employ extra help in tabulating and correcting enrollment and preparing the same for distribution within the time provided by statute. Bills to the amount of two hundred dollars have been rendered against the county for such extra

help and the question is now presented whether the Election Board had the authority to employ such extra assistance and make the expense thereof a charge against the county.

Section 197 of the Election Law, relating to the employment of clerks, assistants and stenographers by the Boards of Election, reads as follows:

“§ 197. *Appointment of employees.* Every board of elections shall have power to fix the number, salaries, duties and rank of its chief clerks, clerks, assistant clerks and stenographers and to appoint and remove at pleasure and to fix the salaries of all employees of said board, but not in excess of the amounts specified in section one hundred and ninety; except that in a county having a population of less than ninety thousand the board may have one clerk only and his salary shall not exceed nine hundred dollars per annum, nor shall the aggregate expenditure for such clerk hire and for stenographer exceed the amount specified in section one hundred and ninety.”

That part of section 190 above referred to which applies to Cayuga County, reads as follows:

“In each county having a population of less than ninety thousand and which does not contain within its boundaries at least three cities of the third class the salary of a commissioner shall not exceed one thousand dollars, and the expenditure for clerk hire, including stenographer, each year, shall not exceed fifteen hundred dollars.”

Cayuga county has a population of less than ninety thousand and contains within its boundaries but one third class city. The above provisions are definite and certain and the limitation of fifteen hundred dollars for clerk hire and stenographer is clear and distinct. I am unable to find any other section or provision of law which permits an enlargement of the authority of the local board to incur obligations, which would be binding upon the county, above the amount specified.

It will be noted by section 197, above quoted, that in a county having a population of less than ninety thousand, the board is

limited to one clerk whose salary cannot exceed \$900. This leaves \$600 for the employment of additional clerk and stenographer's services. The provision is mandatory. The local boards have no authority in excess of that given them by statute. Their powers and duties cannot be enlarged or extended by implication. If they have authority to exceed the statutory limitation by \$200 it could be extended to \$2,000 or any other amount which such boards should conceive it necessary to use for extra help.

There is no intimation in the letter of inquiry that the board of Supervisors has provided for extra help in the office of the Board of Elections in the county of Cayuga, or fixed the salaries of additional employees. It is stated that extra help has been employed in previous years and the services paid for by the county, but this simply amounted to a ratification by the Board of Supervisors of the action of the Election Board, so far as it related to services previously rendered, but cannot be tortured into an authorization for future employment of additional assistants or the fixing of salaries for extra clerks.

It is possible that the Board of Supervisors of Cayuga county would have the power and authority, under subdivision 5 of section 12 of the County Law, to employ additional assistants and obligate the county to pay a greater amount than that mentioned in section 197 of the Election Law, and, under the dictum laid down in *People ex rel. Simpson v. Snyder*, 173 A. D. 171, the Board of Supervisors would have the right to fix the salaries of such clerks and employees at different amounts than those fixed by the Election Board, and the rates so fixed by the Board of Supervisors would prevail over the rates established by the Boards of Elections for the clerks and assistants employed by them. This would only apply to the salaries of such clerks and assistants as were fixed by the Board of Supervisors in advance of the rendition of the services, otherwise the Boards of Election have authority, under the limitations contained in section 197 of the Election Law, to fix the salaries of all clerks, stenographers and employees of such boards.

I am therefore of the opinion that the County Treasurer of Cayuga County is not authorized to pay any amount in excess of

\$1,500 in any one year for clerk hire, stenographer and additional assistants, unless it is provided for by previous action of the Board of Supervisors.

Dated, February 25, 1918.

MERTON E. LEWIS,

Attorney-General.

TO FREDERICK L. MARSHALL, *Superintendent of Elections*
Albany, N. Y.

SELECTIVE SERVICE REGULATIONS, SECTION 78, MARINERS.

Fishermen employed on small vessels fishing within the three mile limit, the nature of whose employment is similar to that of servants ashore and not of seamen in deep sea trade, are not entitled to classification as "Mariners actually employed in the sea service of any citizen or merchant within the United States."

INQUIRY

The inquiry is whether a certain registrant is entitled to classification in Class IV. b. as a mariner actually employed in sea service of citizen or merchant in the United States. According to Mr. Guthrie's letter, the registrant was a dock hand and fisherman employed on a boat on Peconic Bay. His duties consisted of casting nets and doing general work on the boat.

OPINION

A member of the legal advisory board attached to the local board having jurisdiction of the case is quoted as stating that the uniform decisions of the Federal Courts were to the effect that such a man as the registrant is a mariner.

I do not think that the conclusion arrived at by the associate member of the local advisory board referred to is justified by the reported opinions of the Federal Courts. I find a great number of opinions in Federal Courts in which the term "mariner" and the term "seaman" are defined for the purpose of determining whether a court of admiralty can take jurisdiction of a proceeding *in rem* for the collection of wages. These authorities are almost uniform in holding that almost anybody who works on any boat which plies upon tidal waters may libel the ship for wages. The persons held to be mariners include the ship's officers, purser, cook

(male or female), steward, stewardess, porter, engineer, coal passes, etc., etc., and the boats subject to libel in these actions include everything from steamers to pile drivers and dredges. I do not think, however, that the fact that a man is a "seaman" for the purpose of enforcing his claim for wages in admiralty should be held to render him a "mariner actually employed in sea service of citizen or merchant in the United States." In other words, I do not think that the authorities referred to are in point in the construction of the selective service regulations. (The authorities may be found in the Century Digest under the title "Seaman," section 1 and in the Key Number digests under "Seamen," section 2).

Another class of cases construes the meaning of various statutes providing that nuncupative wills are valid when made by mariners while at sea. These authorities seem to be to the effect that a nuncupative will made by a ship's employee while in a foreign port will be valid, but that such a will would not be valid if made while the ship were lying alongside in its own home port. There are also decisions to the effect that nuncupative wills are not valid if made in the Mississippi River, in the Schuylkill River, etc. These cases do not seem to me to be much more in point than the first mentioned class, nor to be of any assistance in determining one way or the other upon the interpretation of the selective service regulations.

There is a third class of cases, however, which are absolutely unquestionable authority. This is the class of cases interpreting statutes exempting from military duty "All mariners actually employed in sea service of any citizen or merchant within the United States." I have been unable to find any Federal Court decisions upon such statutes, but in the absence of them I regard the decisions of the Supreme Judicial Court of Massachusetts and the Supreme Court of Judicature of New York to be controlling.

In the early part of the nineteenth century there were federal statutes and statutes in Massachusetts and New York requiring the performance of militia duty and exempting mariners in actual sea service. Several cases arose in Massachusetts where fishermen claimed exemption and the courts granted the exemption on the basis that fishermen should be considered as seamen or mariners,

but the fishermen in these cases were deep sea fishermen who signed articles in the nature of shipping papers, and who became, under the federal statutes with respect to fishermen, entitled to the same rights and subject to the same liability as seamen in the merchant service; for example, in the right to medical treatment, lime juice rations, provisions, prohibition of payment of wages in advance, liability to penalties and forfeitures for breach of discipline and punishment for desertion. It is to be noted that the federal statutes under which these fishermen signed shipping articles, only applied to boats of twenty tons and up, engaged in sea fishing — the cod fishers of the banks and the mackerel fishers of the coast — and is still upon the statute books (See U. S. Revised Statutes, section 4391 ff). The reason for exempting mariners and fishermen was explained in these early Massachusetts cases by the fact that those men subjected themselves to special duties and would become liable to the penalties by fine and imprisonment for failure to attend to those duties as agreed. Reporting for militia duty would be likely to cause absence from the other duties. As the court said in *Commonwealth vs. Douglas*, “If therefore, any of the fishermen, thus engaged, should remain and train, when the vessel was about to sail, they would be liable as deserters.” (17 Mass. 49–51.) (See also *Bayley vs. Merritt* 2 Pick. 597.) These cases, as pointed out, were cases of fishermen in the deep sea fishing business.

Another class of cases in the Massachusetts Courts is exemplified in the case of *Pratt vs. Hall*, 4 Mass. 239. Pratt, on being fined for failure to do military duty, pleaded that he was a mariner actually employed in the sea service of a citizen or merchant of the United States. In support of his claim to this exemption, he proved that he was master of a certain sloop of eighteen tons burden and had paid hospital money, as a mariner, to the collector of the customs in Boston, and that the sloop was duly licensed to carry on the coasting trade and was actually and generally employed in transporting building material from and to the islands in the harbor of Boston, never going outside of the light-house. The court held that Pratt was a lighterman and not a mariner employed in sea service.

In the case of *Commonwealth vs. Newcomb*, 14 Mass. 394, the master of the enrolled vessel employed in transporting stones from

one part of Boston Bay to another, and occasionally making a short trip to sea for the purpose of fishing, was held not to be exempt from military duty as a mariner in the sea service. The entire opinion is interesting, so I have quoted it in full.

“PARKER, C. J. The provision, under which the respondent claims an exemption from duty under the militia laws of the United States and of this commonwealth, is thus expressed: “all mariners actually employed in the sea service of any citizen or merchant within the United States.” He claims to be such a mariner, on the ground that he is master of a vessel or lighter of thirty-three tons, enrolled and licensed, and as having paid hospital money.

“The exemption is to be determined by the occupation of the person claiming to be a mariner, and not by the character of the vessel; for a small vessel may be enrolled, and hospital money may be paid for the very purpose of evading militia duty.

“It appears that the respondent was not employed in the sea service, but only in the transportation of stones, etc., from one part of the same district to another. There is no difference in principle between this case and that of Pratt vs. Hall. For the difference in the size of the vessel, and the increased distance of transportation, cannot give an exemption, where the nature of the business is the same, and where it is not necessary to go beyond the bay, or out of the reach of common law jurisdiction, to pursue that business..

“The case of fishermen would seem to require the exemption much more than those who are employed, like the respondent, in transporting stones from one river or inlet to another within the same bay; for the former are constantly upon the water, and cannot so well calculate their business on shore as the latter. But the Legislature has refused this exemption to fishermen. For, by the statute of 1814, c. 63, they repealed the statute of 1810, c. 111, which secured this privilege to fishermen, considering them not as mariners employed in the sea service. Those fishermen who are employed in the bank fishery are probably to be considered

as mariners, while actually engaged therein. But there seems to be no reason why the master of a small vessel, plying from Braintree or Weymouth to Boston, should be exempt, which would not in a great measure apply as well to teamsters who should carry on the same business in wagons and carts."

In the courts of New York the decisions were similar. In *Brush vs. Bogardus*, 8 Johns. 157, it was held that the master of a sloop sailing on the Hudson River between Poughkeepsie and New York, enrolled as a coasting vessel and sailing under a license, is not a mariner in the sea service and exempt from militia duty.

As pointed out in the Massachusetts cases, the reason for exemption of mariners is that they have undertaken other obligations, the failure to perform which will render them liable to punishment by fine and imprisonment. This is true also of the Grand Banks fishermen, but it is not true of a deck hand and fisherman in a cat-boat upon Peconic Bay, who probably seldom, if ever, passes out of the three-mile limit, and most likely spends most of his nights at home ashore. The arrangements of the registrant in question with his employer are probably similar to the arrangements which the employer might make with a teamster ashore and in no way similar to those made between seamen and masters of vessels in the foreign or deep sea trade, or in the coast trade.

I have not before me the full facts with respect to this man's employment, but it seems to me that unless his employment is similar to that of the deep sea fishermen, and very different from that of the ordinary servant ashore, he should not be treated as a "mariner in the sea service" any more than would be the boot-black on a Coney Island excursion boat.

Dated February 23, 1918.

MERTON E. LEWIS,
Attorney-General.

TO BRIGADIER GENERAL CHARLES H. SHERRILL, *The Adjutant General, Albany, N. Y.*

MOTOR VEHICLES, HIGHWAY LAW, SECTION 285, FOREIGN CORPORATIONS DOING BUSINESS WITHIN THIS STATE.

The mere running of a motor vehicle into the State for the purpose of making delivery of goods purchased in an adjoining State for delivery in this State does not constitute "doing business within this state" within the meaning of section 285 of the Highway Law.

INQUIRY

How should the phrase "other than a foreign corporation doing business in this state" as used in section 285 of the Highway Law, be construed in enforcing that and the preceding sections?

OPINION

Sections 282, 283, 284, 284-a of the Highway Law require the registration of all automobiles used in the State, and fix the fees for such registration. Section 285 provides that the requirements for registration shall not apply to vehicles registered in other states, which shall be exempt to the extent that the states of their registration exempt New York cars. The exemption, however, is restricted to "a motor vehicle owned by a nonresident of this State, *other than a foreign corporation doing business in this state,*" etc. It was clearly the intention of the Legislature to exclude from the exemption the cars of foreign corporations actually doing business in this State and to require such cars to be registered and licensed in New York, even though they might be already registered and licensed in the state of domicile of the owner. The suggestion has been made that the phrase "a foreign corporation doing business in this state" as here used means only a foreign corporation *duly licensed to do business in in the State*. To this I cannot agree. The Legislature in enacting section 15 of the General Corporation Law, prohibits foreign stock corporations from "doing business in this state," but recognizes that the prohibition is sometimes violated, by imposing a penalty in the form of a provision that no foreign corporation doing business in this State shall maintain any action in this State upon any contract made by it in this State unless prior to the making of the contract it shall have filed its papers and procured a certificate of authority to do business in the State.

I think that a foreign corporation which does business within this State in violation of section 15 of the General Corporation

Law is just as much prohibited by the Highway Law from running unlicensed automobiles in this State as is a foreign corporation which complies with section 15 of the General Corporation Law.

This brings us to the question of what constitutes "doing business within this state." The decisions of the courts upon the meaning of this phrase, as used in the General Corporation Law, are legion. They hold that the prohibition against foreign corporations "doing business within this state" should be construed as preventing foreign corporations from entering the State and there engaging in the general prosecution of their business without first obtaining the requisite certificate, but that the prohibition of all corporate transactions by foreign corporations, irrespective of their nature, was not intended.

In *Penn Collieries Co. vs. McKeever*, 183 N. Y. 98, the court said: "To be doing business in this state implies corporate continuity of conduct in that respect: such as might be evidenced by the investment of capital here with the maintenance of an office for the transaction of its business, and those incidental circumstances, which test the corporate intent to avail itself of the privilege to carry on a business." In order to constitute doing business in the state, there must be more than an occasional transaction. (*Brown Seed Co. vs. Richardson*, 53 Misc. 517.)

The courts also hold that shipping goods into New York, pursuant to orders received in another state, does not constitute "doing business within the state." (*Hovey vs. DeLong, etc. Co.* 211 N. Y. 420.) This is true even where the foreign corporation maintains in the state offices where its wares may be demonstrated, if the samples are not sold and all orders are transmitted to the home office of the corporation without the state for acceptance (*Burrowes Co. vs. Caplin*, 127 App. Div. 317). Sales by foreign corporations in New York, through brokers or commission merchants, do not constitute doing business in the state (*Brockford Mills, vs. Baldwin* 1154, App. Div. 553), and delivery of goods so sold, within the state of New York, being merely an incident to the transaction, is not "doing business within the state."

This being the state of the authorities, I think the Secretary of State would be quite justified in advising his inspectors that foreign corporations not licensed to do business within the state will not be presumed to be doing business within the state by the mere fact that they occasionally send their motor cars across the boundary. Such corporations should be treated by those inspectors as not "doing business within the state", in the absence of evidence that they are *regularly* transacting business within the state, other than the mere filling of orders received elsewhere.

Dated February 26, 1918.

MERTON E. LEWIS,
Attorney General.

TO HON FRANCIS M. HUGO, *Secretary of State, Albany, N. Y.*

ARTICLE II, SECTION 1, CONSTITUTION OF THE STATE OF NEW YORK: SECTION 41, VILLAGE LAW; SECTION 22, GENERAL CONSTRUCTION LAW; SECTION 162, ELECTION LAW.

Women are entitled to vote at a village election and eligible to hold village office.

INQUIRIES

1. Is a woman qualified to vote at a village election?
2. Is a woman eligible to hold a village office?

OPINION

At the annual election held on November 6, 1917, the voters of the State of New York adopted an amendment to article II, section 1 of the Constitution, conferring equal suffrage upon women, which amendment took effect on January 1, 1918, and reads as follows:

"Section 1. Every citizen of the age of twenty-one years, who shall have been a citizen for ninety days, and an inhabitant of this state one year next preceeding an election, and for the last four months a resident of the county and for the last thirty days a resident of the election district in which he or she may offer his or her vote, shall be entitled

to vote at such election in the election district of which he or she shall at the time be a resident, and not elsewhere, for all officers that now are or hereafter may be elective by the people, and upon all questions which may be submitted to the vote of the people, provided, however, that a citizen by marriage shall have been an inhabitant of the United States for five years; and provided that in time of war no elector in the actual military service of the state, or of the United States, in the army or navy thereof, shall be deprived of his or her vote by reason of his or her absence from such election district; and the legislature shall have power to provide the manner in which and the time and place at which such absent electors may vote, and for the return and canvass of their votes in the election districts in which they respectively reside."

Under such amendment all women in the State possessing the requisite qualifications of a voter became duly qualified voters.

The general qualifications of a voter are prescribed by section 162 of the Election Law, and require that such person must be a citizen of the United States, twenty-one years of age, an inhabitant of the State for one year next preceding the election, and for the last four months a resident of the county, and for the last thirty days a resident of the election district, and, if a naturalized citizen, such voter must have been naturalized at least ninety days prior to the day of election. Said section 162 of the Election Law further states that such qualified voter "is a male citizen," and this has led to a belief that women were not qualified to vote until such section 162 is amended, eliminating the word "male." This is not necessary for the reason that the amendment to article II, section 1 of the Constitution supersedes section 162 of the Election Law. The masculine term "he" is also used in said section 162, which has given rise to the assumption that women were not qualified until said section of the Election Law is amended. An amendment in this respect is unnecessary for the reason that section 22 of the General Construction Law states that wherever the masculine is used it includes the feminine.

The qualifications of voters at village elections are governed by section 41 of the Village Law, as follows:

“ 1. To entitle him to vote for an officer, he must be qualified to vote at a town meeting of the town in which he resides, and must have resided in the village thirty days next preceding such election.

“ 2. To entitle him to vote upon a proposition, he must be entitled to vote for an officer, and he must also be the owner of property in the village assessed upon the last preceding assessment-roll thereof. A woman who possesses the qualifications to vote for village officers, except the qualifications of sex, who is the owner of property in the village assessed upon the last preceding assessment-roll thereof, is entitled to vote upon a proposition to raise money by tax or assessment, or for the dissolution or change of name of the village or for the borrowing of money upon the bonds or other obligations of the village, payable in future fiscal years for the purpose of purchasing, constructing and maintaining the village improvements specified in section one hundred and twenty-eight.”

To vote for officers as a village election, a person must possess the qualifications set forth in section 162 of the Election Law; but to vote upon a proposition such voter must possess the additional qualification of being the owner of property in the village assessed upon the last preceding assessment-roll thereof.

No registration of voters is required in a village election except where, pursuant to section 51-a of the Village Law, the voters have adopted a proposition requiring the registration of voters. And if such registration is required the inspectors of election of each election district of such village shall meet on the tenth day preceding each village election for the purpose of preparing a register for such election. Therefore, if registration is required women may appear on registration day and register.

The amendment to article II, section 1 of the Constitution, conferring equal suffrage upon women, removed the sex disability; and all women having the necessary qualifications of a voter, as prescribed by section 162 of the Election Law and

section 41 of the Village Law, are duly qualified voters and entitled to vote at village elections.

The amendment to article II, section 1 of the Constitution carries with it the right of women to hold office. And any woman possessing the necessary requirements, under section 42 of the Village Law, is eligible to hold any village office.

Dated, February 28, 1918.

MERTON E. LEWIS,
Attorney-General.

TO JOHN S. VAN ORDEN, Esq., *Village Clerk, Spring Valley, N. Y.*

ARTICLE II, SECTION 1, CONSTITUTION OF THE STATE OF NEW YORK: SECTION 22, GENERAL CONSTRUCTION LAW; SECTIONS 151, 160 AND 162, ELECTION LAW; ARTICLE II, SECTIONS 7, 8 AND 13, CITY LOCAL OPTION LAW, BEING CHAPTER 624, LAWS OF 1917.

Women, possessing the qualifications of voters, are entitled to sign the city local option petition and qualified to vote at the city local option election.

INQUIRY

Can a woman, possessing the qualifications of a voter, sign the city local option petition and vote at the city local option election?

OPINION

At the annual election held on November 6, 1917, the voters of the State of New York adopted an amendment to article II, section 1 of the Constitution, conferring equal suffrage upon women, which amendment took effect on January 1, 1918, and reads as follows:

“Section 1. Every citizen of the age of twenty-one years, who shall have been a citizen for ninety days, and an inhabitant of this state one year next preceding an election, and for the last four months a resident of the county and for the last thirty days a resident of the election district in which he or she may offer his or her vote, shall be entitled to vote at such election in the election district of which he or she shall at the time be a resident, and not elsewhere, for all officers that are now or hereafter may be elective by the people, and upon all questions which may be submitted to

the vote of the people, provided, however that a citizen by marriage shall have been an inhabitant of the United States for five years; and provided that in time of war no elector in the actual military service of the state, or of the United States, in the army or navy thereof, shall be deprived of his or her vote by reason of his or her absence from such election district; and the legislature shall have power to provide the manner in which and the time and place at which such absent electors may vote, and for the return and canvass of their votes in the election districts in which they respectively reside."

Under such amendment all women in the State possessing the requisite qualifications of a voter became duly qualified voters.

The general qualifications of a voter are prescribed by section 162 of the Election Law, and require that such person must be a citizen of the United States, twenty-one years of age, an inhabitant of the State for one year next preceding the election, and for the last four months a resident of the county, and for the last thirty days a resident of the election district, and, if a naturalized citizen, such voter must have been naturalized at least ninety days prior to the day of election. Said section 162 of the Election Law further states that such qualified voter "is a male citizen," and this has led to a belief that women were not qualified to vote until such section 162 is amended, eliminating the word "male." This is not necessary for the reason that the amendment to article II, section 1 of the Constitution supersedes section 162 of the Election Law. The masculine term "he" is also used in said section 162, which has given rise to the assumption that women were not qualified until said section of the Election Law is amended. An amendment in this respect is unnecessary for the reason that section 22 of the General Construction Law states that wherever the masculine is used it includes the feminine.

An alien woman who becomes a citizen by marriage must not only possess the qualifications prescribed in section 162 of the Election Law, but she must also have been a resident of the United States for five years next preceding the election at which she votes.

Section 7 of the City Local Option Law directs that

“The petition for the submission of any of the questions under this chapter shall be signed by qualified electors of the city to the number of twenty-five per centum of the votes cast in the city at the preceding general election.”

An elector is a person who has a legal right to vote and upon such elector complying with the requirements of the Election Law in relation to registration he or she becomes a duly qualified voter. Women, pursuant to article II, section 1 of the Constitution, are vested with the legal right to vote and are, therefore, qualified electors and entitled to sign such petition and are equally entitled with men to circulate such petition.

The basis for the computation of the number of signatures necessary to a city local option petition is not made on the vote cast for any particular office at the last preceding election, but must be made from a computation of the total number of votes cast in each election district at the last preceding election, which will include not only all the votes cast for candidates for a certain office but also the void, protested and blank ballots.

The qualifications of a voter at a city local option election are set forth in section 13 of the City Local Option Law, as follows:

“Any registered elector who would be qualified to vote for city officers if such officers were to be then elected, shall be qualified to vote upon such local option questions. For the purpose of ascertaining such electors, the registers of electors in the city prepared on the last preceeding day of registration shall be used after revision and correction on the second Saturday preceding the election, in the manner provided in the election law.”

The revision and correction of the register referred to herein is accomplished pursuant to sections 151 and 160 of the Election Law. Section 151 provides:

“If a special election be called by the governor or a special or other election be appointed by or pursuant to law for a time other than the day of general election, the inspectors of election of the various election districts in the

political subdivision for which such special or other election is to be held shall meet in their respective districts on the second Saturday preceding such election, from eight o'clock in the forenoon to ten o'clock in the evening, for the purpose of revising and correcting the register of voters as provided in this article."

By chapter 7 of the Laws of 1918, section 151-a was added to the Election Law providing for additional days of registration for special elections in the year 1918, and directs that

"such meetings shall be held, respectively, on the second Friday and second Saturday before the election."

The duties of the board of registration for the purpose of revising and correcting such register are set forth in section 160 of the Election Law, and in substance are: that the inspectors shall retain upon the register the names of all persons qualified to vote at such election which appear upon the register of electors for the last preceding general election. They shall strike from such register the names of such electors as are proven to the satisfaction of the inspectors to have ceased to be electors of such district since their names were placed upon the register, and they shall add to such register the names of all persons qualified as electors who shall personally appear for registration. Under these provisions of law for the revision and correction of the register, all women who possess the requisite qualifications of a voter may appear before the board of registration and have their names placed upon the registry of voters.

After such registration women will have complied with all the necessary requirements under the law, and will be duly qualified to vote upon such local option questions.

I therefore hold that women are duly qualified electors and are entitled to sign the petition for the submission of local option questions in cities, and are eligible to vote at such city local option elections.

Dated, February 28, 1918.

MERTON E. LEWIS,
Attorney-General.

To C. A. DAYTON, Esq., *City Clerk, Auburn, New York.*

MILITARY LAW, SECTION 245; LAWS OF 1917, CHAPTER 435; WAR RISK INSURANCE LAW; FAMILY ALLOWANCES.

Family allowances under the federal War Risk Insurance Law should not be deducted in computing the excess of civil compensation over military compensation under section 245 of the Military Law of the State of New York.

INQUIRY

Under section 245 of the Military Law, in computing the difference between the civil compensation of the State or municipal officer or employee on military duty and the compensation paid to him for the performance of such duty, should family allowances paid by the United States to dependants of enlisted men, in accordance with the provisions of article II of the War Risk Insurance Law (Act of Congress October 6, 1917), be considered as part of the compensation paid to such enlisted men for the performance of military duty?

OPINION

Section 245 of the Military Law, as amended by chapter 435 of the Laws of 1917, provides, *inter alia*, that officers and employees of the State and its municipal corporations and political subdivisions entering the federal military, naval or marine service under stated conditions, while in the performance of duty in such service "shall receive such part of his salary or compensation as such officer or employee as equals the excess, if any, of such salary or compensation over the compensation paid to him for the performance of such duty" to the extent of not less than twenty-five dollars a month. This act took effect May 10, 1917.

On October 6, 1917, the War Risk Insurance Law of the United States took effect. Article II of that statute provides that enlisted men with wives or children must allot certain amounts, and may allot greater amounts, and enlisted men with other dependents may allot certain amounts of their military pay to such persons, and it goes on to provide that in cases where allotments have been made the United States will pay to the dependents of the enlisted men certain monthly allowances — if there be a wife but no child, fifteen dollars; if there be a wife and one child, twenty-five dollars, etc., etc. In cases where allotments are voluntary, the allowances are only made if and while the enlisted man makes an allot-

ment. The amounts of family allowances are fixed by the number, relationship and condition of the dependents, the amount of voluntary allotment made them by the enlisted man and his habits with respect to their support prior to his enlistment. They do not depend upon the rank or grade of the enlisted man, the amount of his military pay nor the extent of the services he renders or is expected to render.

The question is whether family allowances paid to the dependents of an enlisted man should be regarded as part of the "compensation paid to him" for military duty.

While it might be said that the family allowances paid to dependents are compensation to them for the absence of the man who ordinarily supported them, it can hardly be said that they are "compensation paid to him for the performance of such (military) duty." The allowances are not *paid to him*, nor are they compensation for the performance of military duty, not being in any way based on the quantity or quality of the duty performed.

The amount of military compensation paid a man depends on his rank, the nature of his duties and the place where he is required to perform them. A man holding a higher rank or performing more important duties or fighting in foreign lands receives higher pay than another not so ranked or detailed. The amount of the compensation is directly related to the value of the services rendered or the risk incurred. A soldier's pay is governed by what he *does* — and it does not vary by reason of his marital status, the number of his children or dependent relatives, nor their financial condition. In the payment of soldiers we find the elements of *quid pro quo* and *quantum meruit*.

The family allowances however contain neither the element of *quid pro quo* (to the soldier) nor that of *quantum meruit*. They have nothing to do with the value of the services rendered or the risk incurred by the soldier, but are based upon purely extrinsic circumstances — the number and relationship of dependents, the degree of their dependency, the amount of voluntary allotment made by the soldier, and his habits before enlistment with respect to their support.

It has been suggested that if I consider family allowance as not part of the compensation paid to the man for military service, I should also exclude so much of the man's pay as he is obliged by the statute to allot to his wife and children. This does not follow. A man's salary is his compensation, even though he may be required by law to pay part of it in alimony to a divorced wife, in support of a child, in settlement of old debts, or in taxes for the maintenance of the government. If a man's dependents should die or become independent during his military service, *they* would cease to draw family allowances, but *he* would continue to earn the same compensation whether permitted to draw it all himself, required to send some of it home, or required to leave half of it on deposit with the government until his discharge.

Section 245 of the Military Law provides for the payment *to the man* of the difference between his civil salary or compensation and the compensation *paid to him* for military service — it operates whether he is single or married, supporting a family or supported by one, and contains nothing to indicate that it was passed for the benefit of anybody but the man himself.

I am satisfied that in interpreting the Military Law we should not consider family allowances as part of the compensation paid to a man for military service and should not deduct them in computing the excess of civil over military pay.

Dated, March 8, 1918.

MERTON E. LEWIS,
Attorney-General.

To Hon. WILLIAM P. BURR. *Corporation Counsel, New York City.*

ELECTION LAW, SECTION 292 — TITLE VI, SECTION 20 OF CHAPTER 751 OF THE LAWS OF 1895, BEING AN ACT TO REVISE THE CHARTER OF THE CITY OF HUDSON — SPECIAL ELECTION ALDERMAN — CITY OF HUDSON — TIE VOTE.

The Governor is authorized, in his discretion, to proclaim a special election to fill the office of alderman in the first ward in the city of Hudson where there was a tie vote at the general election held on November 6, 1917.

INQUIRY

The Common Council of the city of Hudson has requested the Governor to call a special election in that city for the election of

an alderman in the first ward where there was a failure to elect by reason of a tie vote at the general election held on November 6, 1917. Before so doing the Governor has asked my advice as to his duty and authority to call such special election.

OPINION

The inquiry presents the question to be determined of whether the vacancy occurring in the office of alderman in the first ward of the city of Hudson should be filled pursuant to title VI section 20 of the city charter, or whether the power is vested in the Governor to fill such vacancy under the provisions of section 292 of the Election Law.

Title VI, section 20, of the City Charter provides that:

“ Vacancies occurring in any manner in any elective office, shall be filled by a special election to be ordered by the common council at its first regular meeting after the occurrence of the vacancy; which election shall take place within one month after such order. If, however, such vacancy shall occur within six months before a municipal election, no special election shall be ordered, but the common council shall fill the vacancy until the first day of January next ensuing, if the vacancy shall occur in the year eighteen hundred and ninety-five, and until the first day of May next ensuing, if the vacancy shall occur in any other year, but the person elected to fill a vacancy shall not hold the office longer than the thirty-first day of December next ensuing if the vacancy shall occur in the year eighteen hundred and ninety-five, nor longer than the thirtieth day of April next ensuing, if the vacancy shall occur in any other year. In case of vacancy occurring during the year eighteen hundred and ninety-five the person elected to fill a vacancy shall not hold the office longer than the thirty-first day of December, eighteen hundred and ninety-five. In the case of vacancies during the year eighteen hundred ninety-six the person elected to fill a vacancy shall not hold the office longer than the thirtieth day of April next ensuing.”

Section 292 of the Election Law, providing for the filling of vacancies in elective offices, directs that

“ Upon the failure to elect to any office, except that of governor or lieutenant-governor, at a general or special election, at which such office is authorized to be filled, or upon the death or disqualification of a person elected to office before the commencement of his official term, or upon the occurrence of a vacancy in any elective office which can not be filled by appointment for a period extending to or beyond the next general election at which a person may be elected thereto, the governor may in his discretion make proclamation of a special election to fill such office, specifying the district or county in which the election is to be held, and the days thereof, which shall be not less than thirty nor more than forty days from the date of the proclamation.”

It is my opinion that the Governor is authorized, in the situation presented in the city of Hudson, to proclaim a special election to fill the office of alderman of the first ward caused by reason of a tie vote at the general election held on November 6, 1917. From a reading of title VI, section 20 of the City Charter, I am led to the conclusion that the power of the Common Council to order an election to fill a vacancy is limited to those vacancies enumerated in section 30 of the Public Officers Law, viz: the death of the incumbent; his resignation; his removal from office; his ceasing to be an inhabitant of the State; or, if he be a local officer, of the political subdivision, or municipal corporation of which he is required to be a resident when chosen; his conviction of a felony or a crime involving a violation of his oath of office; the judgment of a court declaring void his election or appointment, or that his office is forfeited or vacant; his refusal or neglect to file his official oath or undertaking, if one is required, within the time prescribed by law.

It should be observed that section 292 of the Election Law provides for the filling of vacancies which have occurred because of a failure to elect, to those occurring before the commencement of the term, upon the death or disqualification of the person elected to office, and, lastly, to a vacancy “ in any elective office.” A vacancy “ in any elective office ” is a vacancy arising during the

term of that office, and the power of the Governor to fill such vacancy is limited to cases where the office "cannot be filled by appointment." If the vacancy had occurred after the beginning of the term of office, no question would arise as to the power of the Common Council of the city of Hudson to order a special election to fill such vacancy. This vacancy, however, has occurred from a failure to elect by reason of a tie vote, and clearly comes within the provisions of section 292 of the Election Law empowering the Governor to order a special election.

Also assuming that the Common Council of the city of Hudson was possessed of the power and authority to call a special election to fill the vacancy in question, pursuant to title VI, section 20, of the City Charter, such body is without power at the present time for the reason that such section directs that a vacancy

"shall be filled by a special election to be ordered by the common council *at its first regular meeting after the occurrence of the vacancy.*"

The first regular meeting of the Common Council, after the vacancy occurred, having passed, no authority exists in such body to call a special election at this time. The Governor now has, and has had for a period of over seventy years, a well defined power in instances of this character to call a special election; and even though the Common Council have the power to call a special election, at its first regular meeting after the occurrence of the vacancy, the omission to exercise that power would be a sufficient reason for the Governor to issue a proclamation for such special election.

I therefore reach the conclusion, for the reasons hereinabove set forth, that the Governor is authorized, in his discretion, under the provisions of section 292 of the Election Law, to proclaim a special election to fill the office of alderman of the first ward of the city of Hudson, where a vacancy exists by reason of a tie vote at the election held on November 6, 1917.

Dated, March 20, 1918.

MERTON E. LEWIS,
Attorney-General.

To HON. CHARLES S. WHITMAN, *the Governor of the State of New York, Capitol, Albany, New York.*

SURETY COMPANIES — TITLE COMPANIES — FIELD OF BUSINESS WITH RESPECT TO GUARANTEEING LOANS SECURED BY MORTGAGE — INSURANCE LAW, SECTIONS 70 AND 170.

In agreeing to indemnify a federal land bank from loss by reason of defective title to premises upon which such bank holds a mortgage, surety companies are not exercising the surety company power to guarantee the performance of contracts, but are guaranteeing or insuring the title to the premises.

Surety companies cannot guarantee the repayment of loans secured by bond and mortgage. Where the hazard is that of title only, the legislature has conferred the business upon title insurance companies exclusively.

STATEMENT

Several surety companies, as appears from a communication of the Superintendent of Insurance, dated February 20, 1918, intend to issue a bond to Federal Land Banks in connection with loans made by such banks to farmers upon the security of bond and mortgage. In order to facilitate these loans by obviating delays due to a complete investigation of the title of the mortgaged premises, an abstract covering twenty-one years last past is to be accepted by the banks after approval by the bank's abstractors and a bond given by the borrower with approved sureties conditioned as follows:

"Now therefore, in consideration of a premium of Dollars, the Surety Company does hereby guarantee to said bank the repayment of any part of said loan that may, in consequence of any defect in the title of the mortgagor to the mortgaged property, be uncollectible from the mortgagor, his heirs or assigns."

INQUIRY

You ask whether the proposed transactions will invade the field of business held by title companies under our statutes, or, more precisely, whether such transactions are or are not title company business *exclusively* under the provisions of our Insurance Law.

OPINION

Under our New York statutes a surety company may be formed for the purpose, among other powers, of "guaranteeing the performance of contracts" (section 70, Insurance Law), and it is this power which the surety companies claim they are exercising

when writing the above bond. From a careful analysis of the bond, I am at a loss to see how it guarantees the performance of a contract. The contract of the farmer is to repay the loan. The proposed surety company bond does not guarantee in any respect the contract of the borrower to repay the loan. The bond in substance simply indemnifies or insures the bank against loss by reason of a defect of title in the mortgaged premises. It is an engagement that the title to the premises mortgaged is good and if not the company will pay any loss resulting from defect of title, which as I shall hereinafter point out is a policy of title insurance under section 170 of the Insurance Law. Such a bond as the company proposes to write acknowledges and recites the existence of a primary obligation upon the part of the borrower to repay the loan but does not guarantee the *performance of that obligation* by the borrower.

The business of a title insurance company is thus defined in section 170 of the Insurance Law:

“ § 170. Incorporation. Five or more persons may form a corporation for one of the following purposes:

1. To examine titles to real property and chattels real, to procure and furnish information in relation thereto, make and guarantee the correctness of searches for all instruments, liens or charges affecting the same, *guarantee or insure the payment of bonds and mortgages, or notes of individuals or partnership secured by mortgages upon real property situated in this or any other state*, and bonds, notes, debentures and other evidences of indebtedness of solvent corporations secured by deed of trust or mortgage upon real property situated in this or any other state, invest in, purchase and sell, with such guarantee or with guarantee only against loss by reason of defective title or incumbrances, bonds and mortgages, and notes of individuals or partnerships secured by mortgages upon improved and unincumbered real property situated in this or any other state worth fifty per centum more than the amount loaned thereon, and bonds, notes, debentures and other evidences of indebtedness of solvent corporations secured by deed of trust or mortgages upon

improved or unincumbered real property situated in this state or outside of this state worth fifty per centum more than the amount loaned thereon, *and guarantee and insure the owners of real property and chattels real and others interested therein against the loss by reason of defective titles thereto and other incumbrances thereon*, which shall be known as a title guarantee corporation; * * *."

The net result effected through the proposed policy to be issued by the surety company to the Land Bank is the same as if the surety company had under the power last above recited issued a policy of *title insurance* directly to the bank as a party "interested" in real property as mortgagee.

The agreement of the surety company is not a guarantee of the payment of the mortgage by the borrower for there are no provisions therein contained that the principal or interest of the mortgage will be paid at all. Rather, as I have before stated, it is a guarantee that the title under the mortgage is good and the agreement might just as well, so far as its efficacy is concerned, have been entered into between the bank and the surety company without the participation of the mortgagor. The hazard is that of title only.

In opposition to these conclusions the surety companies cite the following illustrations of business already done by them:

(1) A man borrows money with which to purchase an automobile and agrees to pay the loan in installments and gives his notes for the deferred payments, these notes being secured by a chattel mortgage upon the automobile. The borrower is required to give a bond conditioned to pay the unpaid installments of the loan in case —

- (a) He fraudulently absconds with the automobile; or
- (b) There is a serious injury to, or destruction of the automobile and its abandonment by him.

This, it is alleged, is a contract of suretyship and is not automobile insurance even though one of the contingencies under which liability can accrue is the destruction of the automobile and its abandonment.

(2) A man who is about to let to another a factory in which there is a boiler demands of the lessee a bond with surety conditioned to pay such part of the rent as may be uncollectible in consequence of the destruction of the premises by an explosion of the boiler.

Such a transaction, the surety company asserts, is not boiler insurance. In each of the above instances, the company argues the bond guarantees to a limited extent the performance of an obligation to pay a sum of money, though in both cases the only contingency under which liability can accrue is a hazard insurable only by other classes of insurance companies.

The difference which I perceive between the cases offered as illustrative by the surety companies, and the presently proposed bond to the land banks, is that in the illustrations furnished there is an indemnity agreement against failure of the borrower or the lessee to pay. They are guarantees that a person will do something. On the other hand the agreement with the bank does not guarantee that the farmer will do anything. Regardless of whether or not the title is good or bad, there is no engagement by the surety company that the farmer will pay the loan or the mortgage. If the title is not good the stipulation is that the surety company as an abstract proposition will make good the loss on the collateral arising from defect of title. It is immaterial to the surety company who the borrower is. If the borrower happens to pay there is of course no loss to the bank, but that does not alter the nature of the agreement which in my opinion is a contract of insurance against loss through defect of title. In the case of the automobile, the substance is that should the collateral be destroyed, the borrower will nevertheless pay. The agreement with the land bank is that should the collateral be destroyed, it will be made good again.

It is further suggested that the functions of a title company are, broadly speaking, as follows:

1. To examine titles to real property and to insure the owners of real property and others interested therein against loss by reason of any defect in the titles so examined; and

2. To invest in, purchase and sell bonds and mortgages, with

guarantee of payment or guarantee only against loss by reason of defective title to the mortgaged property.

“The surety companies,” it is said, “have no desire to interfere in any way with these very proper and appropriate functions of title guaranty companies nor to exercise those functions themselves. The surety companies have no desire to go into the business of examining and guaranteeing titles to real property, nor to invest any of their money in mortgage loans and offer those mortgages for sale as guaranteed mortgages. But the surety companies insist that, under their express power to guarantee the performance of contracts, they have the right to guarantee the payment of loans, whether those loans be secured by mortgage or not, *so long as they do not examine titles and do not invest their money in mortgage loans and offer such mortgages for sale accompanied by their guarantees.*”

The argument of the surety companies then continues: “we think that these ordinary, normal and natural functions of a title guaranty company, involving the examination of titles, and the investment of money in mortgage loans and selling those mortgages with their guarantee, may be considered the exclusive functions of title guaranty companies. It may be that title guaranty companies also have the right to guarantee loans secured by mortgage, where the title is not examined by them or in their behalf and where they have not previously invested their own funds in the mortgage; but if they have this right, this is also the normal and natural function of a surety company and we insist that it is a right which surety companies also have and can exercise and that the *exclusive* privilege of title guaranty companies stops with the guarantee of loans based on their own examination of the title or an examination made in their behalf and where their own funds are invested in the mortgage to be guaranteed.”

The argument would be availing were the title companies *required by law to first examine* the titles under the mortgages which they guarantee or the premises which they insure. There is, however, nothing in the law requiring them to examine titles before insuring the same or guaranteeing mortgages thereon. The legislature in conferring upon title companies the power to guarantee the payment of mortgages must have assumed, that

they would examine the title, and the theory of the legislation must have been to confer the power to take a title risk, which includes the guaranteeing of mortgages, upon companies who would make a business of examining titles, not upon surety companies which cannot under the law conduct the business of examining, certifying or insuring titles.

There can be no doubt that the only risk that the surety companies are taking in their agreement with the land bank is that of title. The risks are recited in the schedule policy as follows and are all title hazards:

The surety company agrees to protect the bank against:

(a) Any defect of any kind in the title of the mortgagor to the mortgaged property;

(b) Any conveyance or lease of coal, oil gas, mineral or other surface or subsurface right, right of way, or other right or privilege, affecting the mortgaged property;

(c) Any defect in said title, whether shown or disclosed by the official records or not, as well as errors or omission in said official records;

(d) Any error, omission or misstatement of fact in the original abstract of title, or any information subsequently furnished or supplied by an approved abstractor, which subsequent information shall be deemed a part of said abstract of title, when attached thereto;

(e) Any mistake, misjudgment or misconstruction of law, as well as any mistake or error of any kind on the part of any member of the legal department of said bank.

I cannot but conclude that the agreement with the land bank is the guaranteeing or insuring of a title and not the guarantee of the payment of a loan.

In what I have so far said I have assumed a right in the surety company to guarantee the payment of a loan in whole or in part if the risk assumed was not that of defect of title. In other words, I have assumed that the surety company could guarantee the repayment of the loan irrespective of the fact that the loan was secured by a mortgage provided only that the guarantee did not attempt to guard specifically against a defect of title. However,

there is a strong indication that the guarantee of the payment of any note or bond secured by a mortgage is business confined exclusively to a title guaranty company. Section 170 in this connection reads: A title guaranty company may be formed to "guarantee or insure the payment of bonds and mortgages or notes of individuals or partnerships secured by mortgages upon real property situated in this or any other state," and to "guarantee and insure the owners of real property and chattels real and others interested therein against the loss by reason of defective titles thereto and other incumbrances thereon." Under these powers a title company may guarantee absolutely the payment of a bond secured by a mortgage on real property or may guarantee the mortgagee against loss by reason of defective title only. That is, a title company is vested with power essentially that of a surety in so far as the title company guarantees absolutely the repayment of a loan secured by a bond and mortgage, and exercises a power functionally that of a title company in guaranteeing the mortgagee against loss by reason of defect of title. The whole field therefore, including what might naturally be considered the business of a surety company to guarantee absolutely the repayment of the loan and also the business naturally that of a title company to guarantee the mortgagee against loss from defect of title, has been turned over by statute to the title companies.

I am of the opinion that the surety company may not undertake the proposed business. Where the hazard is that of title the legislature has conferred the insurance company business upon title companies to the exclusion of all other insurance companies.

Dated, March 25, 1918.

MERTON E. LEWIS,
Attorney-General.

To Hon. JESSE S. PHILLIPS, *Superintendent of Insurance,*
Albany, N. Y.

ARTICLE II, SECTIONS 1 AND 4, OF THE CONSTITUTION — SECTIONS 155 AND 168, ELECTION LAW — REGISTRATION OF VOTERS — AGE OF VOTERS — A PERSON WHO REGISTERS FOR THE PURPOSE OF VOTING MUST GIVE HIS OR HER AGE.

INQUIRY

Is a person, who gives his or her age as upwards of twenty-one years, entitled to have his or her name duly registered on the register of voters?

OPINION

Section 155 of the Election Law, which prescribes the form for the registration of voters, directs that for all registrations outside of a city having more than one million inhabitants in the eighth column of the register shall be entered the age of the person so applying for registration; and in a city having a population of over one million inhabitants that in the ninth column of the register shall be entered the voter's age. Among other facts to be entered in the register to determine the qualifications of the voter are his or her name, residence — giving street and number, length of residence in the district by years, months and days, as the case may be, the country of nativity, whether born or naturalized, the place where such person last registered and voted, the voter's business, place where employed, etc. And in the last column the elector shall, at the time of personal registration, sign his or her name in his or her own handwriting. All of these facts, except citizenship, length of residence in the State, county and election district, and that such voter must be over twenty-one years of age, are not necessary requirements under article II, section 1 of the Constitution. Said article II, section 1 of the Constitution does not even require registration.

Article II, section 1 of the Constitution reads as follows:

“Section 1. Every citizen of the age of twenty-one years, who shall have been a citizen for ninety days, and an inhabitant of this state for one year next preceding an election, and for the last four months a resident of the county and for the last thirty days a resident of the election district in which he or she may offer his or her vote, shall be entitled to vote at such election in the election district of which he

or she shall at the time be a resident, and not elsewhere, for all officers that now are or hereafter may be elective by the people, and upon all questions which may be elective by the people, and upon all questions which may be submitted to the vote of the people, provided however that a citizen by marriage shall have been an inhabitant of the United States for five years; and provided that in time of war no elector in the actual military service of the state, or of the United States, in the army or navy thereof, shall be deprived of his or her vote by reason of his or her absence from such election district; and the legislature shall have power to provide the manner in which and the time and place at which such absent electors may vote, and for the return and canvass of their votes in the election districts in which they respectively reside."

The additional requirements are directed by article II, section 4 of the Constitution which states that:

"Laws shall be made for ascertaining, by proper proofs, the citizens who shall be entitled to the right of suffrage hereby established, and for the registration of voters."

The additional information required as provided by article II, section 4 is for the purpose of identification and to prevent fraud and illegal voting in congested communities. In the *Matter of Ahern vs. Elder*, 195 N. Y. 498, Justice Werner, in writing the opinion of the court, said:

"It is a matter of common knowledge that the great centers of population offer peculiar opportunities for fraud and corruption in the conduct of elections, which can be prevented or minimized only by special regulations adapted to the conditions out of which these evils arise. Thus it is that primaries and elections in cities have to be hedged about by statutory provisions that are not deemed necessary in villages and towns. The same reasons which underlie the distinction drawn between cities and rural communities apply to the classification of cities, for the difficulty of preserving the purity of the electorate increases in geometrical ratio with the density and size of population. It is

competent, therefore, for the legislature to prescribe such reasonable regulations as are designed to secure accurate information concerning the qualifications of voters, and that necessarily includes some method of identification."

And further:

"The constitution not only contains no prohibition against the enactment of laws for regulating the right of suffrage, but positively enjoins the passage of such laws, and so long as they do not add to the qualifications required of electors by the constitution, the legislative will is supreme."

The above opinion determined the constitutionality of the act requiring an elector to attach his signature to the register; and such signature is required for the purpose of identifying the voter. It would seem that for the purpose of identification the age of the voter is no less important than that of the signature. The intent of the act requiring that an elector should give his exact age was to provide an additional and even more certain method of identification. It is difficult to imagine any other reason for such requirement.

The argument has been advanced that if a board of registration refuses to accept the statement "upwards of twenty-one" in answer to the question of age that such voter, when challenged, could swear to the questions contained in the challenge affidavit and give the answer "upwards of twenty-one" years.

This cannot be done for the reason that the voter would encounter the same difficulty in the challenge affidavit as he or she would encounter in the attempt to register. Section 168 of the Election Law prescribes the form of the challenge affidavit and, as to age, the following question is asked "How old are you?" This is susceptible of only one answer and that is the exact age of the registrant.

The constitutional requirement of a qualified voter for the purpose of having his or her name placed on the register is that he or she shall be twenty-one years of age. But for the purpose of securing adequate proof of identification, as directed by article II, section 4 of the Constitution, the legislature has enacted a law which requires a voter to give his age. It is not only a

reasonable requirement, but is a requirement which does not add to the qualifications of a voter. Neither does it conflict with any constitutional provision.

I am therefore of the opinion that, under sections 155 and 168 of the Election Law, a voter must give his or her age to entitle such person to have his or her name placed upon the register of voters.

Dated, April 3, 1918.

MERTON E. LEWIS,
Attorney-General.

TO HON. FREDERICK L. MARSHALL, *Superintendent of Elections,*
Albany, N. Y.

Memorandum as to right of students of Syracuse University to vote at Syracuse city local option election on April 16th and 17th, 1918.

At the direction of the Attorney-General, I went to Syracuse on Sunday night, April 14, 1918, to confer with Mr. Rothmann, the representative of the State Superintendent of Elections and to advise him with reference to the right of the students of Syracuse University to vote at the city local option election to be held on Tuesday and Wednesday, April 16th and 17th, 1918.

On Monday morning, I conferred with Mr. Rothmann and also Assistant Corporation Counsel Frank W. Harris and also with the city clerk of Syracuse.

I found that Chancellor Day of the university had made a statement that all of the students were entitled to vote and that some others representing one of the interests involved in the election had announced that none of the students were entitled to vote. I also found that the corporation counsel's office had a printed form of affidavit made for the purpose of testing the right of these students to vote, which form was that suggested by Attorney-General O'Malley in an opinion rendered by him in 1909 and published in the volume of opinions of that year at page 901.

I concluded that the matters required to be elicited by such affidavit were pertinent and constituted a proper supplement to the regular challenge affidavit. Fearing however that there was not a clear enough understanding of the constitutional provision and the rules laid down by the courts in connection with the right of a student to lose or gain a residence, I prepared a statement which met with the approval of Mr. Rothmann and Mr. Harris setting forth the law and the decisions for the guidance of the students and supplied through Mr. Harris all of the newspapers with copies of that statement. The annexed is a copy of such statement.

I was also informed by Mr. Howe, a Syracuse man connected with the Superintendent of Elections office, and one of the leaders in the Dry movement, that he would take up the matter with the university authorities and exhibit this statement to them in order that so far as possible any misunderstanding on the part of the students might be obviated which would be apt to lead to any unfortunate attempts on the part of students to vote who were not qualified under the law.

April 16, 1918.

HAROLD J. HINMAN,
First Deputy Attorney-General.

STATEMENT OF HAROLD J. HINMAN, FIRST DEPUTY ATTORNEY-GENERAL, WITH REFERENCE TO THE RIGHT OF STUDENTS TO VOTE AT THE CITY LOCAL OPTION ELECTION AT SYRACUSE, DELIVERED TO MR. ROTHMANN, REPRESENTING THE STATE SUPERINTENDENT OF ELECTIONS AND TO ASSISTANT CORPORATION COUNSEL, FRANK W. HARRIS OF SYRACUSE.

I have come here at the direction of Attorney-General Merton E. Lewis as the result of request from both assistant corporation counsel Frank W. Harris and Mr. Rothmann representing the State superintendent of elections. I have conferred with them this morning with reference to the legal right of students at the University of Syracuse to vote at this local option election.

I have examined the affidavit prepared by the city authorities for execution by any student who presents himself or herself at any polling place and claims the right to vote on the ground that he or she has established a residence in Syracuse irrespective of his or her attendance at the university, as the law requires. The proposed affidavit gives in outline certain things which Attorney-General O'Malley in 1909 believed would tend to indicate that the person swearing to it had changed his or her residence. I have agreed with Mr. Harris and Mr. Rothmann that this affidavit is pertinent and proper and can be required to be executed in addition to answering the statutory questions usually asked upon challenge of a voter. This affidavit is prepared for that purpose.

We do not, however, wish to be understood to hold that the facts required to be stated in such proposed affidavit are the sole pertinent facts in the determination of this right of a student to vote here.

There is no rule of thumb which has been laid down by the courts. Each case must be determined upon its own facts.

There are some general rules, however, that the courts have recognized which serve to guide us. For example, the Court of Appeals has said that the mischief against which this section is aimed is: "The participation of an unconcerned body of men in the control through the ballot box of municipal affairs in whose further conduct they have no interest." *Silver vs. Lindsay*, 107 New York 55.

The courts have also held that a student is not qualified to vote in the election district wherein the religious seminary he attends is situated, by reason of the fact that in entering the seminary he renounced all other residences or homes and agreed to remain there until assigned to duty as a priest after graduation. In *re Barry*, 164 New York 18.

They have said, however, that they did not mean to say that a voter may not change his legal residence into a new district in spite of the fact that he or she becomes a student in an institution of learning, "But the facts must be wholly independent and outside of his presence in the new district as a student and should be very clear and convincing to overcome the natural presumption. The intention to change is not alone sufficient."

"It must exist but must concur with and be manifested by resultant acts which are independent of the presence as a student in the new locality. It is only in quite exceptional cases that a result could be reached." *Matter of Goodman*, 146 New York 284.

The Court of Appeals, calling attention to the necessity of rigid enforcement of this constitutional rule that a person can neither gain or lose a residence by reason of his presence or absence while a student of any seminary or learning, has had this to say: "We have to say in conclusion that unless the rule laid down in the *Goodman* case and followed in the case at bar is rigidly enforced the constitutional provision now construed will be nullified. It may be urged that the enforcement of this rule will render it well nigh impossible for a student to establish a residence in a seminary of learning, but the very obvious answer is that the letter and spirit of the constitution contemplate such a result; the sojourn of the student is assumed to be temporary, and the law preserves to him his former residence, notwithstanding his absence therefrom." *Matter of Garvey*, 147, New York 117.

Since the preparation of the affidavit supplied by Attorney-General O'Malley in his opinion of 1909, the courts have clearly indicated that the written expression of an intention to change the residence is of no more consequence than a verbal declaration to the Board of Registry. There must be evidence of some action tending to show that the person has abandoned the former residence and that he has done something outside of taking up his abode at the seminary for the purpose of becoming a student. In the case of *Matter of McCormack*, 86 App. Div. 362, for example, the court held that letters written by a student a year previous to the election to the mayor of the city and to the Board of Registry in the election district in which the seminary was located, stating that it was his intention when he became a student at the seminary to make it his actual and legal residence, was insufficient to effect a change of address because the letters did not state any facts showing any acts tending to show that the former residence was abandoned and "that he had ever done anything outside of taking up his abode at the seminary for the purpose of becoming a student."

It is essential that he should both abandon his former residence by some unequivocal act such as notification of the authorities where he formerly resided, which is provided for in the proposed affidavit to be used here, but in addition he must show how he has gained a new residence here which can only be demonstrated by some act or acts of his outside of being at the university. The proposed affidavit, together with the challenge affidavit, which its supplements, assumes a satisfactory answer in both these respects in order to entitle a student to vote. This is necessarily so for the reason that the Constitution states that he can neither gain nor lose a residence by reason of his presence or absence while a student at the university.

We cannot state any more exact rule for the guidance of the students of Syracuse University. We have endeavored to set forth the precedents which have arisen in the courts heretofore in which the courts have laid down the broad general rules above referred to. Each student must determine for himself or herself whether he or she has done the things necessary to entitle him or her to vote on Tuesday or Wednesday next. Unless the necessary facts as required by such rule appear in the proposed affidavit together with the usual challenge affidavit, the courts will not sustain the right of the student to vote.

Dated Syracuse, N. Y., April 15, 1918.

MERTON E. LEWIS,
Attorney-General.

HAROLD J. HINMAN,
First Deputy Attorney-General.

Memorandum with Reference to Senate Bill, Int. 1178, P. 1550, Entitled "An Act to Create a State Commission to Inquire into the Subject of Retirement Pensions, Allowances and Annuities for State and Municipal Officers and Employees and Making an Appropriation Therefor."

This bill provides for a commission "consisting of seven members, of whom one shall be the superintendent of insurance of the State of New York. Two shall be appointed by the Governor, one by the temporary president of the Senate and one by the speaker of the Assembly, to inquire into the subject of retirement pensions," etc.

Thus the bill provides for the appointment of but five members of the seven. Section 6 of the Public Officers Law, however, seems to make suitable provision for the appointment of the two additional members not specifically provided for in the bill. Such section provides as follows:

“If the law shall not otherwise provide the mode of choosing a state officer, he shall be appointed by the Governor, by and with the advice and consent of the senate.”

It was unnecessary therefore to make specific provision in the act of the method of appointment of any of these commissioners and reading the bill in question in connection with section 6 of the Public Officers Law, it seems clear that it was the legislative intent to vary this rule only to the extent of determining the method of appointing the five specifically provided for.

Section 30 of the Public Officers Law provides that where a new office shall be created such office shall for the purposes of appointment or election be vacant from the date of its creation until it shall be filled by election or appointment

Section 39 of the Public Officers Law provides that where a vacancy occurs in the office of an officer appointed by the Governor by and with the advice and consent of the Senate, such vacancy if it occurs while the Senate is not in session shall be filled by the Governor for a term which shall expire at the end of twenty days from the commencement of the next meeting of the Senate.

From consideration of these provisions of the Public Officers Law, it seems to me that the Governor is in a position to bring about the appointment of these two additional members as recess appointments and if the other appointments provided for in the bill are made, a full commission will be created.

Dated, May 1, 1918.

MERTON E. LEWIS,
Attorney-General.

By HAROLD J. HINMAN,
First Deputy.

To Hon. FRANKLIN B. LORD, *Counsel to the Governor.*

WORKMEN'S COMPENSATION LAW — AMENDMENT TO SECTION 2 BY THE ADDITION OF GROUP 45.

“Workmen or operatives” specified in group 45, added to section 2 of the Workmen's Compensation Law by Senate Bill, Int. No. 602, Prt. No. 1608, refers to employees who do manual labor or are mechanics or artisans and does not mean clerks or those engaged in professional work.

INQUIRY

The Governor of the State of New York has requested an opinion with reference to the construction of the new Group 45, which is added to the previous groups specified as hazardous occupations under section 2 of the Workmen's Compensation Law. This new group is included with other amendments in Senate Bill Int. No. 602, Prt. No. 1608, which bill is in the hands of the Governor, and which provides that it shall take effect immediately so that it will become a law at once upon its being signed.

This new group 45 is as follows:

“All other employments not hereinbefore enumerated carried on by any person, firm or corporation in which there are engaged or employed four or more workmen or operatives regularly employed, in the same business in or about the same establishment, either upon the premises or at the plant or away from the plant of the employer, under any contract of hire, express or implied, oral or written, except farm laborers and domestic servants.”

The question is what class of employees are covered by the term “workmen or operatives?”

OPINION

The word used throughout the Workmen's Compensation Law at present is that of “employee.” This group brings in a new term “workmen or operatives,” which term seems to have been adopted from the Ohio statute, which provides:

“Every person in the service of any person, firm or private corporation, including any public service corporation employing five or more workmen or operatives regularly in the same business or in or about the same establishment under any contract of hire,” etc.

The term “workmen or operatives” would seem to have a more restricted meaning than that of “employee” and to refer

to laborers, mechanics or artisans who do manual labor, and not to clerks or those engaged in professional work, and it is my opinion that the courts will so construe it.

The Court of Appeals has already held in the case of *Bowne v. Bowne Co.*, 221 N. Y. 28, and *Howard v. Howard*, 221 N. Y. 605, that the word "employee" does not refer to the executive officers of a corporation but rather to those who were employed for wages or upon a salary.

In Massachusetts it has been held that a janitor, appointed to do all work of cleaning, heating, ventilation, washing windows, care of yards, etc., about two schools, was both a "laborer" and a "mechanic." *White v. City of Boston*, 226 Mass. 517, 166 N. E. 481. But a teacher, employed at an annual salary in the automobile department of an industrial and vocational school, was not a "laborer," "workman" or "mechanic." *Lesner v. City of Lowell*, 227 Mass. 44, 116 N. E. 483. In Kansas, a police officer, not being a "workman," is not entitled to compensation. *Griswold v. City of Wichita*, 99 Kan. 502, 162 Pac. 276.

It has been held in Great Britain that a certified manager of a colliery, receiving 400 pounds a year, who did no manual labor, was not a "workman." *Simpson v. Ebbw Vale Steel, Iron & Coal Co.*, 92 L. T. 282, 7 W. C. C. 101.

The same rule is applied as to a chemist, whose duties were largely in the making of laboratory experiments and who in connection therewith did considerable manual labor. *Bagnall v. Levinstein*, 96 L. T. 184, 9 W. C. C. 100.

It is my opinion, therefore, that the term "workmen or operatives" would not be held to include clerical or professional work but would be limited to those who do manual labor or were mechanics or artisans. I can only speak in general terms. It would be difficult, if not impossible, to be more specific with reference to the many employments carried on throughout the State.

Dated, May 4, 1918.

MERTON E. LEWIS,
Attorney-General.

TO HON. CHARLES S. WHITMAN, *Governor of the State of New York, Albany, N. Y.*

MEMORANDUM CONSTRUING CHAPTER 569, LAWS OF 1916, IN RELATION TO
ACQUISITION OF LANDS FOR STATE PARK PURPOSES WITHIN THE FOREST
PRESERVE COUNTIES.

Chapter 569 of the Laws of 1916, section 4, provides that the proceeds of \$7,500,000 of bonds after appropriations by the legislature

“shall be applicable to the acquisition of lands for *state park purposes* within the forest preserve counties, which lands, if now owned by the state under existing law, would be part of the forest preserve.”

Chapter 569 of the Laws of 1916 is entitled:

“An act making provision for issuing bonds to the amount of not to exceed \$10,000,000 for the acquisition of lands for *state park purposes*.”

Section 1 of the act provides that the proceeds of the bonds shall be

“expended for the acquisition of lands for *state park purposes* as hereinafter provided.”

Section 3 provides that \$2,500,000 of the \$10,000,000

“shall be applicable to the acquisition of lands for the extension of Palisades Interstate Park.”

Section 4 of article 7 of the State Constitution provides for the creation of debts by the State by referendum to the people and provides that

“No debts shall hereafter be contracted by or in behalf of this State, unless such debt shall be authorized by law, *for some single work or object to be distinctly specified therein*,” etc.

In view of the fact that chapter 569 of the Laws of 1916 was a referendum act creating a debt pursuant to the provisions of the above section of the Constitution, it is apparent that the “single work or object” for which this particular debt has been authorized is the acquisition of lands “for state park purposes” and the proceeds of the bonds issued pursuant to this law cannot be used for any other purpose.

There have been two purposes for which lands could be acquired in the forest preserve by the State, one purpose being to establish a public park and the other being the protection and conservation of the lands, forests and waters within the State.

It may be urged that the language of section 4 of chapter 569 of the Laws of 1916 is broad enough to permit the acquisition of lands anywhere within the forest preserve counties whether within or without the boundaries of the Adirondack or Catskill Parks, as defined in the Conservation Law.

It is my opinion, however, that this broad interpretation might lead to the unconstitutional use of the proceeds of these bonds for a purpose other than the single work or object contemplated and which the Constitution requires shall be strictly complied with. The acquisition of scattered parcels of land throughout the forest preserve counties unrelated in any reasonable way to an intelligent scheme of State parks laid out in the Conservation Law might be defended as a matter of general protection and conservation of the lands, forests and waters within the State, but could scarcely be defended as the acquisition of lands for State park purposes.

This leads me to consider the situation which existed in this State at the time and prior to the time of the passage of this referendum act. A number of years ago, the scheme of the forest preserve was laid out but the area covered was so great that it seemed to the State advisable to lay out within that area two parks known as the Adirondack Park and the Catskill Park within which the State would first undertake to acquire lands. It was, therefore, provided in section 62 of the Conservation Law, that certain lands should constitute these two parks and that section defines the boundaries of the parks.

It is also to be noted that the Conservation Law has provided a consistent scheme for the acquisition of lands in the forest preserve. Section 50 which prescribes the powers and duties of the Conservation Commission provides in subdivision 6 that the Commission shall have the power, duty and authority to

“Purchase, subject to the approval of the governor, lands, forests, rights in timber or any interest therein, situated within the Adirondack or the Catskill parks or lands contiguous, connected with or adjacent to either park.”

Section 59 also provides that

“The commission shall, with the approval of the governor, have the power and authority to appropriate real property in the manner and under the conditions herein defined:

“1. Purposes: (a) The commission may enter upon and take possession of any lands or waters or both, or of any forests and rights in timber upon such lands, or upon any part, or portion thereof, within the Adirondack or Catskill parks or adjacent thereto, the appropriation of which, in the judgment of said commission, shall be necessary for public park purposes, or for the protection and conservation of the lands, forests and waters within the state, and

“(b) May enter upon and take possession of any lands or waters or both, within the state that may be necessary, in the judgment of said commission, for the purpose of artificial propagation of food and game fish for restocking the public waters of the state.”

This section also provides the machinery for the acquisition of real property by the Commission for the above purposes. These provisions were added to the Conservation Law by chapter 451 of the Laws of 1916 just prior to the passage of the referendum act of 1916. The machinery for the acquisition was complete as laid out in Conservation Law with the exception of the moneys required for such acquisition. It seems clear to me that the legislature had in mind the use of the proceeds of these bonds for the carrying out of the purposes set forth in the Conservation Law, so far as such purposes related to the acquisition of lands for State park purposes. This is indicated by section 2 of chapter 146 of the Laws 1917, which is an act making an appropriation of moneys derived from the sale of these bonds and providing the methods for acquisition. Section 2 of this act provides in part as follows:

“All the provisions of such section (sec. 59 of the Conservation Law) shall apply to lands to be acquired under this act and the acquisition thereof and to compensation or damages therefor, excepting as follows:

“(1) The entry and appropriation shall be with the

advice and consent of the commissioners of the land office instead of the approval of the governor, and

“(2) Such consent, in writing, shall be filed with the county clerk of each county in which lands proposed to be taken are situated.”

One of the provisions of section 59 is the provision heretofore quoted relating to the purposes for which the Commission may acquire lands and by which provision the Commission is limited to the acquisition of lands “within the Adirondack or Catskill parks or adjacent thereto.”

It is thus apparent that the legislature has limited the use of the moneys appropriated by chapter 146 of the Laws of 1917 to the purchase of lands within these parks or adjacent thereto. Bearing in mind the provision of section 50, paragraph 6, which authorizes the Commission to purchase lands “contiguous, connected with or adjacent to either park,” it is important to determine the significance of the word “adjacent” as used in section 59. There is a difference in meaning which must be given to each of these words as distinguished from the others under the maxim that the expression of one thing is deemed to be the exclusion of all others. The dictionaries seem to distinguish these words giving to the word “adjacent” the meaning of lying near, neighboring but not necessarily in contact, and giving to the word “adjoining” the meaning of joining to or on, so as to touch, and giving to the word “contiguous” the meaning of touching along a considerable line.

Considering the use of these three words in section 50, I believe that the use of the term “adjacent” in section 59 must be given the strict meaning of the term as distinguished from “contiguous” or “adjoining.” In this sense, it is the broadest of these three terms which the legislature could have used in authorizing the commission to purchase lands outside the boundaries of these parks.

It is, therefore, my opinion that the Commission has the authority to acquire lands outside of the blue line which marks the boundaries of these parks, provided the lands acquired are lying near, neighboring but not necessarily in contact with these parks and provided, in the judgment of the Commission, such lands are reasonably necessary for State park purposes.

Whenever lands outside the boundaries of the parks but adjacent thereto are considered by the Commission and the Commissioners of the land office with reference to acquisition for park purposes, it will become necessary to consider all of the facts and circumstances in order to determine whether such lands are sufficiently near to be available in the judgment of such officers to meet the requirement of the referendum act that the same shall be acquired for the purpose of carrying out the project of the Adirondack or Catskill Park.

Dated, May 8, 1918.

MERTON E. LEWIS,
Attorney-General.

TO THE COMMISSIONERS OF THE LAND OFFICE.

By HAROLD HINMAN,
First Deputy.

ARTICLE II, SECTION 1, STATE CONSTITUTION — SECTION 162, ELECTION LAW
— RESIDENCE OF MARRIED WOMEN VOTERS.

The voting residence of a married woman is that of her husband unless for good and legal reasons they are permanently separated.

INQUIRY

Can a married woman establish a voting residence independently from that of her husband?

OPINION

One of the constitutional requirements of exercising the suffrage is residence for a certain period within the political subdivision in which such voter intends to exercise such suffrage privileges.

Article 2, section 1 of the Constitution of the State in so far as it relates to residence provides as follows:

“Every citizen of the age of twenty-one years, who shall have been a citizen for ninety days, and an inhabitant of this state one year next preceding an election, and for the last four months, a resident of the county and for the last thirty days a resident of the election district in which he or

she may offer his or her vote, shall be entitled to vote at such election in the election district of which he or she shall at the time be a resident, and not elsewhere.” * * * *

A similar provision is inserted in the Election Law under section 162 which provides that:

“ a qualified voter is a citizen who is or will be on the day of election twenty-one years of age, and who has been an inhabitant of the state for one year next preceding the election, and for the last four months a resident of the county, and for the last thirty days a resident of the election district in which he or she offers his or her vote. If a naturalized citizen, such person must, in addition to the foregoing provisions, have been naturalized at least ninety days prior to the day of election, or, if a citizen by marriage must have been an inhabitant of the United States for five years prior to such day.”

In construing the provisions of the Election Law the courts have uniformly held that a voting residence as distinguished from the place where one actually and habitually dwells, is not recognized by the law. It is the fixed and permanent home of the elector from which the Election Law contemplates that the elector will register and vote. (*People ex rel. Driscoll v. Bender*, 82 Misc. 671.)

In the matter of *Rooney*, 172 App. Div. 27, the most recent and what I regard as the leading case on the question of the residence of the voter, Justice Woodward in writing the opinion of the court states:

“ residence when used in the constitution, or in statutes relating to the subject of voting and eligibility to office, is synonymous with domicile. * * * It might well be that a man could have two homes — two residences in that sense — and that he might elect which one of those homes should constitute his residence for the purposes of his political rights, but he could not make himself a political resident of both, and so it comes back to the proposition that a man’s residence, for the purposes of voting, is his domicile — his permanent home. That is the point where his relations to

the state center, where his citizenship manifests, and no mere purpose on the part of an individual to hold on to a political residence, apart from his civil abode, can satisfy the letter or the spirit of the Constitution, which seeks to vest the political power of the State in its resident citizens at the point of their domicile."

On the question of residence Justice Kellogg concurring in the result in a separate opinion states:

"A residence for voting purposes is not a mere state of mind, and cannot be established solely by proof of intentions. The intention of the party is a material consideration in determining his place of residence. The intention we are interested in is not where he intends to vote, but where he intends to live as his permanent home. The right to vote may follow his intention, but the mere intention to vote at a place, standing alone, has no particular bearing upon his place of residence. Undoubtedly a man may temporarily leave his home for a longer or shorter time, and maintain his household elsewhere, for purposes of business or pleasure, and so long as he considers his absence as merely temporary, and he has a bona fide intent to return to his former home, he does not lose his residence there. The establishment of a permanent home in one locality, and an intention to vote in another locality, does not make a man a resident of the latter place. His right to vote follows his actual residence, unless the actual residence is merely for a temporary purpose. The intent to permanently live in one place is entirely inconsistent with the right to vote in another place."

The following are leading cases which hold that the terms "residence" and "domicile" are synonymous:

- DeMeli vs. DeMeli, 120 N. Y. 485.
- People vs. Platt, 117 N. Y. 159.
- Wallace vs. Castle, 68 N. Y. 370.
- In re Cleveland Will, 59 N. Y. Supp. 985.

The determination of the residence or domicile of a married woman, therefore, is necessary for the purpose of indicating the

election district in which she may exercise her suffrage. Not only the courts of this State, but the courts of all other states, and those of federal jurisdiction have without exception held that where husband and wife are living together the wife's residence, in contemplation of law, is the same as her husband.

In re Liscomb vs. N. J. R. R. Trans. Co., 6 Lans. 75.

Hunt vs. Hunt, 72 N. Y. 217.

White vs. Glover, 138 App. Div. 798.

Harris vs. Harris, 83 App. Div. 128.

Wacker vs. Wacker, 154 App. Div. 497.

In order to retain the identity of husband and wife and to preserve the unity of the home and to prevent confusion, it is highly important that the residence or domicile of a married woman should be that of her husband. In the matter of Mackenzie vs. Hare et al., 239 U. S. Rep. 299, Mr. Justice McKenna in delivering the opinion of the court said:

“ The identity of husband and wife is an ancient principle of our jurisprudence. It was neither accidental nor arbitrary and worked in many instances for her protection. There has been it is true, much relaxation of it but in its retention, as in its origin, it is determined by their intimate relation and unity of interests, and this relation and unity may make it of public concern in many instances to merge their identity, and give dominance to the husband. It has purpose, if not necessity, in purely domestic policy; it has greater purpose and, it may be, necessity, in international policy.”

In re Wacker v. Wacker, supra, Justice McLaughlin held that:

“ The rule seems to be well settled that the domicile of the husband is prima facie that of the wife.”

In re Harris v. Harris, supra, the court said:

“ This general presumption is supported by the fact that the parties were shown to have been residents of the state immediately after the offense and at the time of the commencement of this action, and by the general rule of law that the residence of the husband, which is not suggested to have been out of this state, determines that of the wife.”

There are certain conditions, however, under which a wife may acquire a separate residence or domicile from that of her husband; but only when the wife has a legal reason for a separation from the husband is she entitled to a separate residence or domicile.

Atherton vs. Atherton, 82 Hun, 179; aff. 155 N. Y. 129.

Gebhard vs. Gebhard, 25 Misc., p. 1.

Matter of Florence, 54 Hun, 328.

Vischer vs. Vischer, 12 Barb. 640.

In re Atherton v. Atherton, supra, the court said:

“At the time of the offense there was no occasion for the plaintiff to be living apart from her husband so far as the evidence shows. The exception to the rule that the domicile of the husband determines that of the wife is based upon the necessity of permitting a different domicile for the protection of the rights of the wife and not for the purpose of working a wrong upon her.”

In re Hunt v. Hunt, supra, although holding that the domicile of the husband is prima facie that of the wife, also lays down certain exceptions to this general rule, namely, that

“she may acquire a separate domicile wherever it is necessary for her to do so, as where the parties are living apart under a judicial decree of separation, or when the conduct of the husband has been such as to entitle her to a divorce, absolute or limited; but this right springs from and is limited by the necessity of its exercise.”

In many instances, however, the courts have granted a more liberal exception than the one laid down in Hunt v. Hunt. The opinion of the court in re Post v. Post, 149 App. Div. 456, states that:

“It is settled that a wife may acquire a domicile separate from her husband where his conduct justifies her in leaving him or where he deserts her without just cause. (Gray v. Gray, 143 N. Y. 354; Cheever v. Wilson, 9 Wall 108.)”

In re White v. Glover, 138 App. Div. 798, the court found as a matter of fact “that for more than a year prior to the first of

May, 1898, she (the respondent) had lived separate and apart from her husband at her own home in Tuxedo, N. Y., during which time the husband had not contributed anything toward her support."

From this fact so found by the Supreme Court it was determined as a matter of law that the respondent had legally acquired a separate domicile from that of her husband.

The conclusion to be drawn from the various decisions of the courts is that unless a wife is separated from her husband for the purpose of commencing an action for separation or divorce, or where for some other good and valid reason it appears necessary for the wife's own protection and safety that she should live separate and apart from her husband, that the residence or domicile of the wife is determined by the residence or domicile of her husband.

I am therefore of the opinion that where a wife is living with her husband that she cannot designate or claim a separate residence or domicile for the purpose of exercising her suffrage.

Dated May 10, 1918.

MERTON E. LEWIS,
Attorney-General.

To

VALENTINE KOMFORT,
President Board of Elections.

Albany, N. Y.

EMPLOYERS — SALARIES OF CIVILIAN EMPLOYEES OF THE STATE INCREASED BY CHAPTER 556 OF THE LAWS OF 1918.

1. Civilian State employees who have been called into federal military service, and who receive pay under section 245 of the Military Law, are entitled to the benefit of the increase provided for by chapter 556 of the Laws of 1918. Where two or more men, because of military service, are drawing pay for the same civil position, all are entitled to the benefits of chapter 556 of the Laws of 1918.

2. The ten per cent increase applies to State employees for the salaries of whom appropriation is made by chapter 151 of the Laws of 1918, including inmate employees in charitable institutions. But employees in agricultural colleges, not controlled by the State, not being State employees, are not entitled to the increase.

3. Employees, for the payment of whose salaries appropriation is made from the State treasury, are entitled to the benefits of chapter 556 of the Laws of 1918, even when the money paid them is charged

back by the State against the counties of a brigade district, the counties of a judicial district, or an insurance or banking corporation, or reimbursed to the State by the United States government.

4. The ten per cent increase under chapter 556 of the Laws of 1919 should be computed upon the basis of the salary as fixed by chapter 151 of the Laws of 1918, or upon the salary as fixed for the fiscal year beginning July 1, 1918, by some other statute.

5. Section 3 of chapter 556 of the Laws of 1918 excludes from the benefit of the act persons whose duties require only a portion of their time, or whose services are needed for brief periods or intervals, and persons who receive a part of their compensation from the State and a part from some other source. Section 6 of the act refers to employees paid by the piece, hour, or at per diem rates, but who work regularly and devote practically all their working time to their employment by the the State.

6. Employees of commissions such as the Public Service Commission for the First District, and the Bronx Parkway Commission, who are paid by political subdivisions of the State without any appropriation by the State Legislature, although they are State employees for the purpose of the application of the Civil Service Law and other statutes, are not entitled to the benefits of chapter 556 of the Laws of 1918.

7. The exception in section 4 of chapter 556 of the Laws of 1918 of the salaries of employees, which "shall have been increased by any appropriation to an amount exceeding the increase herein provided for," applies to salaries increased by any appropriation effective July 1, 1918, not any appropriation at any time heretofore or hereafter made.

8. It is the salary of the position rather than of the incumbent in each case that is increased.

STATEMENT

Chapter 556 of the Laws of 1918 provides:

"Section 1. During the continuance of the existing war with the German empire and its allies, there shall be paid to all persons employed by the state of New York as civilian employees increased compensation at the rate of ten per centum per annum to such employees who receive salaries or wages from the state of New York at a rate per annum of less than one thousand five hundred dollars.

Section 2. If a person employed by the state receives maintenance, no increase in his compensation shall be allowed under this act if the total of the money compensation and maintenance equals one thousand five hundred dollars. If such total be less than one thousand five hundred dollars the increase allowed under this act shall be ten per centum of the money compensation and not of the total of such compensation and maintenance.

Section 3. The increased compensation provided by this act shall not apply to persons whose duties require only a portion of their time or whose services are needed for brief periods or intervals, or to any persons who receive a part of their salaries

or wages for the same service from other sources, except where compensation is at an annual rate but paid in less than twenty-four installments.

Section 4. If the salary or compensation of an employee shall have been increased by any appropriation to an amount exceeding the increase herein provided for, this act shall not apply to such employee. If the increase by any such appropriation be less than that herein provided for, such employee shall receive, by this act, only the difference between such increase and the increase herein provided for.

Section 5. In any case where the extra compensation allowed under this act would make the total compensation of the employee exceed one thousand five hundred dollars per annum, only such proportion of the increase shall be allowed as to make the total compensation equal one thousand five hundred dollars.

Section 6. In determining the right of civilian employees to increased compensation under this act, such employees as are employed on piece-work, by the hour, or per diem rates, shall be entitled to receive increased compensation at the rate specified when the fixed rate of compensation for the regular working hours on the basis of three hundred and twelve days in a year would amount to less than the highest amount of salary or wages hereinbefore specified for each group; provided, that this method of computation shall not apply to any per diem employees regularly paid a per diem compensation for every day in the year.

Section 7. The sum of one million dollars (\$1,000,000), or so much thereof as may be necessary, is hereby appropriated out of any moneys in the state treasury not otherwise appropriated, to carry out the provisions of this act. The moneys appropriated shall be paid out by the state treasurer on the warrant of the comptroller in the manner provided by law for the payment of moneys appropriated for the compensation of employees affected by this act.

Section 8. This act shall take effect July first, nineteen hundred and eighteen."

INQUIRY

Under the provisions of Chapter 556 of the Laws of 1918:

1. Are those State employees who have been called into the Federal military service, and who receive the difference in pay

between their salaries as State employees and their military pay, entitled to the 10 per cent increase? If they are entitled to that increase, what is to be done in the following cases?

A, drawing a salary of \$1,200 as a State employee has entered the military service and his place has been filled by a new man, B, who in turn is drafted and a new employee C, takes his place. Under such circumstances, does each employee receive the 10 per cent increase?

2. Does the 10 per cent increase apply to the following:

A. State employees in agricultural colleges;

B. Inmate employees in charitable institutions;

3. Are employees entitled to the 10 per cent increase where their compensation is being paid in the first instance by the State and the State is reimbursed from another source, e. g.:

A. Stenographers to the Supreme Court justices, and employees of State armories.

B. Employees in the insurance and banking departments.

C. Employees in State Normal schools receiving compensation under what is known as the Smith-Hughes Federal Act.

4. Upon what salary is the 10 per cent increase to be based? Is it the salary of fixed by Chapter 151, Laws of 1918, fixing the salary for the fiscal year beginning July 1, 1918, or upon the law fixing the salary for the year beginning July 1, 1917?

5. Section 3 seems to contradict section 6 in determining the right to the increase of those civilian employees whose salaries are not paid on the usual basis, that is, semi-monthly.

6. Are the employees of the Public Service Commission for the first district who are paid by the city of New York, and the employees of the Bronx Parkway Commission, who are paid by the city of New York and the county of Westchester, entitled to the benefits of the act?

7. What is the meaning of the phrase "increased by any appropriation," found in section 4 of the act?

8. Is the 10 per cent increase to be paid only to such employees as are in the service of the State on July 1st, or will

it be paid to those appointed thereafter? What will be the effect of a promotion from one grade to a higher grade in the civil service?

OPINION

After the passage of Chapter 151 of the Laws of 1918, being the annual appropriation bill for the State of New York, the Legislature determined to increase the salaries of those civilian State employees (as distinguished from employees in the military service of the State) whose salaries were fixed by the appropriation bill or other statute at less than fifteen hundred dollars a year. Rather than revise the entire appropriation bill, a separate bill was prepared, commonly known as the Lockwood-Fearon bill, which became Chapter 556 of the Laws of 1918, the text of which is quoted above. While this bill was in committee, conferences were had with the Comptroller as to the amount of appropriation which would be necessary in order to effect its objects, and in computing this necessary amount the Comptroller and the Legislative Committee took into consideration all salaries for which appropriations were made by Chapter 151 of the Laws of 1918, and the other laws enacted by the Legislature of 1918, making appropriation for the payment of salaries. There are persons who are considered employees of the State under the Civil Service Law and other statutes, but whose salaries are not paid by the State. The Comptroller and the Legislative Committee did not make any computations with respect to the cost of increasing the salaries of such persons, but confined their calculations to the persons whose salaries come out of the State treasury, and to show that only such persons were intended to be covered by the act, the words were used "to such employees who receive salaries or wages *from the State of New York* at a rate, etc."

1. Under section 245 of the Military Law, a State employee entering the federal military service under designated conditions, whose compensation from the State exceeds his military pay, is entitled to draw from the State the difference between the two, the minimum amount being fixed at twenty-five dollars. Other parts of section 245 of the Military Law provide that a State employee in military service shall not be prejudiced in any

way by reason of his absence from his civil duties. The general purpose of section 245 of the Military Law is to provide that a State employee in military service shall be treated, while performing military duty, just as if he were at home performing the duties of his civil position. Prior to the enactment of Chapter 435 of the Laws of 1917, those entitled to the benefit of section 245 of the Military Law (then only members of the National Guard and Naval Militia) received the full salary while absent on military duty. The Legislature in 1917 extended the benefits of section 245 to persons going into federal military service under specified conditions as well as to members of the National Guard and Naval Militia, but in so doing they reduced the pecuniary benefit accruing to any man under that section by the amount he might receive from the United States for his military service. The final effect of section 245 of the Military Law as amended, is to say to those entitled to its protection: While in military service you will be treated as if you were at home performing the duties of your office, and the State will see that you do not suffer by receiving military pay at a lower rate than the civil pay you receive from the State.

Section 1 of Chapter 256 of the Laws of 1918 increases by 10 per cent the salaries of all persons employed by the State of New York at fifteen hundred dollars per annum or less. Although the statute uses the word "persons," its effect is really to increase in each case the salary of the position, because the actual person occupying a position may, and frequently does, change and the Legislature regularly fixes the salary, not of individuals, but of positions occupied by individuals. It follows that if a position is one for which the salary is appropriated by the Legislature at a rate of less than fifteen hundred per annum, the salary of that position will be increased in accordance with the provisions of the chapter, and this is regardless of whether the incumbent of the position is performing the duties thereof, or is, under the protection of section 245 of the Military Law, absenting himself from such duties for the purpose of doing military service. And it also follows that in determining the amount to be paid to the person entitled to the benefits of both section 245 of the Military Law and Chapter 556 of the Laws of 1918, we should add 10

per cent, not to the amount actually received by that person from the State while on military duty (the difference between his civil and military salaries) but to the salary of the civil position as fixed by the statute, and we should make a new subtraction from this increased salary in order to determine the difference between it and the military compensation.

If one man, A, holding a stated position in the civil service, is drafted into military service, he will be entitled to the benefits of section 245 of the Military Law and receive the difference between his salary and his military pay. If a substitute, B, be appointed to do the work of A's civil position during his absence, the substitute so appointed will usually be entitled to all the rights attached to the position until the return of A. Being entitled to all those rights, if in turn drafted, B will also get the benefit of section 245 of the Military Law. And since Chapter 556 of the Laws of 1918 makes no distinction between regular employees and substitutes appointed for them during their absence on military duty, but really increases the salary of the position regardless of its occupant, both A and B will get the benefit of the increased compensation, as will also C if he be appointed to do the work left undone during the absence of A and B.

2. As pointed out, the intent of the Legislature was to increase the salaries of all those receiving under fifteen hundred dollars from the State.

I see no reason for distinguishing between inmate employees in charitable institutions and any other employees, unless such inmate employees are employed for only a portion of their time, or for brief periods, and come under the exception contained in section 3. Otherwise, I consider them entitled to the increase.

For the purpose of interpreting the Civil Service Law, I have held, as have previous attorneys-general, that employees of agricultural colleges selected by members of faculties of private institutions not controlled by the State, are not considered State employees, and I think that the Legislature in using the phrase "persons employed by the State of New York as civilian employees" excluded persons not State employees, even where paid out of funds appropriated from the public treasury. I

therefore think that those employees of agricultural colleges not controlled or managed by the State are not entitled to the benefit of Chapter 556 of the Laws of 1918.

3. The Legislature in making the appropriation for payment of the increased salaries under Chapter 556 of the Laws of 1918, made its computations upon the basis of all the salaries of under fifteen hundred dollars in an appropriation bill including those in which the State treasury is reimbursed from other sources than general taxation. Consequently, I consider that it was the intent of the Legislature to increase the salaries of such employees along with the rest.

A. In the case of stenographers to Supreme Court justices, the money is raised by the counties in the respective judicial districts and in the case of employees of State armories, the money is raised by the counties in the brigade district, but this money is paid into the state treasury and is appropriated by the Legislature and turned back to the counties for disbursement, but in appropriating it the Legislature considers the requirements of the various courts and armories and the salaries are fixed by general statute in each case. There is no question that these employees are State employees as distinguished from county employees, and I think that the fact that the funds from which they are paid pass through the State treasury and are appropriated by the Legislature, puts them in the class of State employees "who receive salaries or wages from the State of New York."

B. Certain employees in the Insurance and Banking Departments are placed by the heads of those departments in banking and insurance companies for the purpose of examining, controlling, liquidating, etc., and while their salaries are paid by the State, the State reimburses itself out of the funds of the respective corporations, but this does not make the employees any the less State employees who receive their salaries from the State. Their situation is similar to the case of an attorney for a successful plaintiff who obtains a judgment, including an allowance for costs and counsel fees. The fact that the defendant has to pay the counsel fees does not make him any the less the attorney for the plaintiff.

C. The same thing is true of employees of the State Normal Colleges where what is known as the Smith-Hughes Federal Act is in effect. The employees are paid by the State and at specified times, the State certifies to the United States the amount of its expenses in the branches of instruction covered by the act, and the United States reimburses the State, but I think the employees are nevertheless equally State employees who receive salaries from the State.

4. As stated above, the purpose of the Legislature in enacting Chapter 556 of the Laws of 1918 was to avoid the necessity of going over the entire budget as it appears in chapter 151 and revising the figures in every case of a salary under fifteen hundred dollars, and I am satisfied that the intent was to place the increase upon the salaries as fixed by chapter 151. This is made clear by the fact that both chapter 151 and chapter 556 take effect on July 1, 1918.

5. What appears to be a conflict between section 3 and section 6 of chapter 556, disappears when we look into the real intent of each of these sections. Section 3 excludes from the 10 per cent increase persons whose duties require only a portion of their time, such as persons who devote an hour or two a day to State work but have other vocations; persons whose services are needed for brief periods or intervals such as persons employed to make repairs to a building or to give an occasional lecture in a college, or to take the place, for a brief period, of some other employee necessarily absent. This section also excludes persons who, for performing one function, are paid in part by the State and in part from some other source, except where the compensation is at an annual rate but paid in less than twenty-four instalments.

Section 6 on the other hand, applies to regular and practically permanent employees whose compensation is computed, not on an annual basis, but upon the basis of production or on the basis of the number of hours or days of actual employment. A piece-worker or a man paid by the hour or by the day is not necessarily one whose duties require only a portion of his time or whose services are only needed for brief periods or intervals. He may very well devote his entire working time to the State or such a substantial part of it that he would not come within the exception made by section 3.

6. There are certain State employees who are paid by political subdivisions of the State, such as certain of the employees of the Public Service Commission for the First District, and the employees of the Bronx Parkway Commission. There is no doubt that these persons are State employees, within the meaning of the Civil Service Law and other general statutes, but their salaries are paid by political subdivisions of the State through the fiscal officers of those subdivisions, out of moneys raised by taxation in those subdivisions which have never been in the State treasury or appropriated by the State Legislature. The salaries of those persons were not in the budget of the State Legislature when the budget was made the basis for computing the amount of appropriation that would be necessary to provide the 10 per cent increase, and were not within the contemplation of the Legislature when chapter 556 was passed, and I think that the phrase "who receive salaries or wages from the State of New York" was written into the statute for the purpose of making it clear that State employees who do not receive their salaries from the State of New York were not entitled to benefit by its provisions. There was no intent on the part of the Legislature to require a political subdivision to grant 10 per cent increases to the State employees paid by them.

7. It is an elementary rule of statutory construction that a statute should be construed reasonably; that is in such a way that the result will not lead to an absurdity. The Legislature passed chapter 556 of the Laws of 1918 with the purpose of increasing salaries of certain employees by 10 per cent, to enable them better to meet the increased cost of living during the continuance of the war. Its purpose was to make a present remedy for a present condition, and it was not looking into the dim past nor the far off future. The general upward trend of prices and wages throughout the country in the past twenty years has been reflected in salaries of public employees as much as in wages of union laborers, and it would be absurd to say that the Legislature did not intend by chapter 556 to increase the salary of any position, the salary of which was at any time in the past 10 per cent less than it was at the time of the passage of chapter 556. As to the future, if Legislatures yet to be elected decide to make further increase in the salary of any one or any number of positions noth-

ing that this Legislature may wish to do could restrain them, and I do not believe that in passing this statute the Legislature intended to place an unconstitutional limitation upon future Legislatures.

I think that the intent of section 4 was merely to say that if the salary of any position had been increased by any other appropriation effective simultaneously to the extent of 10 per cent over that salary as it stood before, there should be no further increase out of the appropriation made by chapter 556. And similarly where an appropriation effective July 1, 1918 had increased a salary to the extent of less than 10 per cent, that increase would be brought up to, but not beyond, 10 per cent by chapter 556.

8. The Legislature, as stated above, in making appropriations considers the positions rather than the incumbents holding those positions. In an appropriation bill salaries are appropriated to positions and the persons holding those positions are never named. The salary is either an incident of office or a compensation for work performed and is controlled by the nature of the office or the nature and extent of the work, and in no way by the personality of the incumbent. Given a position which pays twelve hundred dollars under the appropriation bill of 1917 and twelve hundred dollars under the appropriation bill of 1918, by chapter 556 of the Laws of 1918 this position is made into a thirteen hundred and twenty dollar position. There may have been several different incumbents in this position during the year 1917-18, but the salary of the position is increased on July 1st and even if the incumbent changes after July 1st the salary of the position will remain at thirteen hundred and twenty dollars. Similarly, if the position be held by an individual who was promoted during the year 1918 from a lower grade position paying a lower salary, he will nevertheless be entitled to the increase provided for after July 1st because, as stated, the increase, like the salary, is connected with the position and not with the incumbent.

Dated June 6, 1918.

MERTON E. LEWIS,

Attorney-General.

By

First Deputy.

TO HON. EUGENE M. TRAVIS, *State Comptroller, Albany, N. Y.*

CANCELLATION OF TAX SALE — AUTHORITY TO GRANT STAY IN PROCEEDINGS TO REVIEW TAX ASSESSMENT — TAX LAW, SECTION 291.

An order staying the collection of a tax made in a certiorari proceeding to review a tax assessment is unauthorized and therefore ineffectual to prevent Comptroller's sale for unpaid taxes.

INQUIRY

The State Comptroller desires to be informed whether, in view of section 291 of the Tax Law, an order of the Supreme Court granting a stay in a certiorari proceeding brought by the New Paltz, Highland and Poughkeepsie Traction Company to review franchise taxes of 1913 against said company, was effective so as to render the tax sale of said property made in 1915 illegal and ineffectual; application having been made by said company for the cancellation of the 1915 tax sale on that ground.

OPINION

Section 291 of the Tax Law makes provision for the allowance of a writ of certiorari to review an assessment, and further provides:

“ * * * The allowance of the writ shall not stay the proceedings of the assessors or other persons to whom it is directed or to whom the assessment is delivered, to be acted upon according to law.”

This statute limits the relief that may be obtained in such proceedings. That the Legislature, for reasons of sound public policy, did not intend to have public officials restrained and hampered in the levy, assessment and collection of taxes, is plainly evidenced by the comprehensive scheme it has enacted in the provisions of section 296 of the Tax Law for the refund of a tax paid on an illegal, erroneous or unequal assessment. Thus while not denying the right to review an assessment, the Legislature has denied relief through the medium of a stay and has prescribed that the source of relief should be through a refund with interest.

Judicial sanction of this view may be found in the case of *People ex rel. The Manhattan Railway Company v. Coleman, et al.*, 48 Hun 602, where the court held that a stay granted in view of the provisions of section 2 of chapter 269 of the Laws of 1880, which is the source of section 291 of the present Tax

Law and contained similar language, was without authority. Nor could a stay be granted pursuant to the provisions of section 2131 of the Code, for the Court of Appeals has held that the provisions of the Code of Civil Procedure relating to certiorari were inapplicable to proceedings to review assessments under the Tax Law. (People ex rel. The Church of Holy Communion v. Assessors of Greenburgh, 106 N. Y. 671.)

The Tax Law is a general and complete scheme for the assessment and collection of taxes. Although jurisdiction is conferred upon the Supreme Court to review assessments under such law by certiorari its jurisdiction is special and limited and wholly dependent upon the statute.

Comesky v. Village of Suffern, 179 N. Y. 393, 398;
Warren v. Union Bank of Rochester, 157 N. Y. 259,
276.

The court must, therefore, look to the statute for its power. I have already demonstrated that while jurisdiction of the parties and subject-matter has been conferred upon the Supreme Court, the statute contains no authority to stay the assessment and collection of taxes, and its order to that extent was a nullity.

It is an elementary rule of law that where a court transcends the limits of its authority, its judgments to that extent are void. (See Hovey v. Elliott, et al., 145 N. Y. 126, and cases there cited). Distinction must be made between those cases where the judgments or orders are merely erroneous or irregular, and those that are absolutely void for want of power or jurisdiction in the court to make them. The former must be obeyed until set aside or vacated in the regular way, while the latter are ineffectual and may be disregarded.

I am of the opinion that the stay granted in the proceeding in question, was ineffectual to prevent the tax sale by the Comptroller, and that the application of the New Paltz, Highland and Poughkeepsie Traction Company or a cancellation of the sale on that ground should be denied.

Dated, June 19, 1918.

MERTON E. LEWIS,
Attorney-General.

To Hon. EUGENE M. TRAVIS, *State Comptroller, Albany, N. Y.*

ACQUISITION OF LANDS FOR STATE PARK PURPOSES, CHAPTER 569 OF THE LAWS OF 1916 AND CHAPTER 146 OF THE LAWS OF 1917.

Under the early patents, in and by which the State granted lands excepting and reserving five acres of every hundred acres for highways, the State did not except a fee but reserved an easement only.

INQUIRY

Under the date of May 23, 1918, the Conservation Commission inquired as to whether the State now owns an enforceable one-twentieth undivided interest in all of the lands in and to which it excepted and reserved five acres for every one hundred acres for highways, in and by the patents granting same. The information was desired, in particular, in connection with the acquisition of such lands for state park purposes, pursuant to chapter 569 of the Laws of 1916 and chapter 146 of the Laws of 1917.

OPINION

I have not found any decision which in my opinion positively decides as to whether the question involved is a *reservation* of an *easement* or an *exception* of the fee.

DeCamp v. Thompson, 16 A. D. 528, (Affirmed 159 N. Y. 436) at pages 538-9 holds:

“ 1. That in and by the Macomb patent the State did expressly reserve to itself for highway purposes 5 acres out of every 100 acres of land thereby conveyed;

2. That the land thus reserved was not specifically designated, but related to the entire tract;

3. That the power thus reserved authorized the State, at any time, to appropriate five per cent of the land embraced in this tract to highway purposes.”

4. That five per cent of each one hundred acres need not be appropriated for highway purposes, but that five per cent of the whole tract might be appropriated in any part of the tract granted.

In cases where none of such highways have been laid out or where the full five per cent of the lands granted has not been appropriated to highway purposes, it is in my opinion permissible to consider the probabilities, that is,—whether the demands for

highways to the full extent of the five per cent, or to any extent, will require the location of highways over and across any particular parcel. In this connection, the physical conditions might be taken into consideration, for instance,—a mountain covering a thousand acres of a five thousand acre tract originally granted by the State, might make it physically impossible to locate a highway on said thousand acres.

In connection with the acquisition of lands for state park purposes, which lands had been previously granted by the State under patents containing the five acre exception and reservation, I am of the opinion:

1. That you should treat the person offering the lands as owner of the fee;
2. That the State has only an easement.

I do not find that the State has ever treated the lands excepted and reserved for highway purposes as having been owned in fee by the State. No argument occurs to me in favor of changing the attitude of the State at this time.

The fee of the entire parcel offered should be granted to the State unless there are existing or contemplated highways over and across same. To take the position that the State already had a fee ownership in a portion of the lands offered would place the person offering such lands where he could not be called upon to convey the part or interest which the State already claimed to own.

This highway question should be given consideration by you before any offer is accepted. Where an offer has been accepted, I will advise you after examination of title, as to whether the patent contained a highway reservation.

In either case you should determine:

1. Whether sufficient highways have been laid out in the entire tract granted, to exhaust the five per cent reservation.
2. If five per cent has been appropriated in the entire patent, for highways, you need not be further concerned.
3. If five per cent has not been appropriated, you should then determine as to the feasibility and probability of locating highways over and across the lands offered.

(a) If you determine that it is not feasible to locate a highway over the lands offered or not reasonably probable that highways will be located over the lands offered, you need not be further concerned.

(b) If you determine that it is feasible to locate a highway over the lands offered and reasonably probable that highways will be located over the lands offered, you should determine the extent and area of same and deduct the value thereof.

4. As to lands embraced within such existing or contemplated highways, same should be surveyed and described and the area computed and deducted, and no payment should be made therefor. The fee thereof should not be conveyed to the State, but the right of the public to use and cross said highway in common with the owner and to improve and maintain same as a public highway should be conveyed to the State in confirmation of the State's rights under said patent.

In all cases where the State has in and by the patent reserved lands for highway purposes, specific mention of that fact should be made in the proposal and also in the recommendation to the Commissioners of the Land Office, so that it may definitely appear that the question has been given consideration by the Conservation Commission and the price fixed accordingly.

Where it is not feasible to determine whether a highway may be presently located, the land may be offered and accepted "subject to the exception and reservation to the State of five acres for every one hundred acres for highways."

As to the right to acquire an easement only, see section 50 (paragraph 6) of the Conservation Law, which provides that the Commission shall have the authority to purchase lands, forests "or any interest therein."

The reason for not conveying the fee of existing or contemplated highways to the State is to leave the ownership of the fee and trees outstanding and permit the maintenance of highways in the Forest Preserve. Otherwise, these trees could not be cut

and highways maintained without contravening the provisions of the State Constitution. (See Sec. 7, Article VII — State Constitution.)

I therefore conclude, in answer to your inquiry, that under the early patents, in and by which the State granted lands excepting and reserving five acres of every hundred acres for highways, the State did not accept a fee but reserved an easement only; that the State does not now own an enforceable one-twentieth undivided interest in all of the lands so granted.

MERTON E. LEWIS,
Attorney-General.

Dated, July 29, 1918.

To Hon. GEORGE D. PRATT, *Conservation Commissioner,*
Albany, N. Y.

CIVIL SERVICE LAW, SECTION 9 — CLASSIFIED AND UNCLASSIFIED SERVICE
— POUNDMASTER.

The poundmaster of the city of Mount Vernon is not the head of a department of government but is in the classified civil service of the city.

STATEMENT

The office of poundmaster in the city of Mount Vernon, for many years classified by the municipal civil service commission, with the approval of the State Civil Service Commission, in the non-competitive class, was the subject of a resolution of the municipal civil service commission on March 25, 1918, which provides:

“*Resolved*, that the position of poundmaster, now classed under the rules of the Municipal Civil Service Commission of the City of Mount Vernon, New York, in the non-competitive class, be changed so that the said position shall be in the unclassified service for the reason that pursuant to Section 12, Article 2, of the Charter of the City of Mount Vernon, enacted March 22, 1892, said position was made an appointive office at \$500 per annum and the encumbent thereof is the head of the department.”

INQUIRY

Was this resolution proper, valid or effective?

OPINION

I am satisfied that the Legislature in enacting section 9 of the Civil Service Law (originally enacted as section 8 of chapter 370 of the Laws of 1899) and providing therein that "the head or heads of any department of the government" should be in the unclassified service had no intention of keeping such positions as poundmaster out of the scope of the civil service examination system.

Section 9 of the Civil Service Law provides that certain officers, including "the head or heads of any department of the government," shall be in the unclassified service, and that all officers not enumerated as in the unclassified service shall be in the classified service. Appointments in the classified service must be made in accordance with the provisions of the Civil Service Law and the rules promulgated thereunder and salaries may only be paid to persons in the classified service after proper certification by the Civil Service Commission under section 20 of the Civil Service Law.

The original Civil Service Law (chapter 354 of the Laws of 1883) provided in section 7 that certain State offices should not be subject to its operation and in section 8 that employees in certain city departments should not be subject to its general provisions. After amendments by chapter 681 of the Laws of 1894, section 1, and chapter 186 of the Laws of 1898, section 1, this part of those sections of the original statute was rephrased and became section 8 of the Consolidated Civil Service Law (chapter 370 of the Laws of 1899); and it was in this consolidation for the first time that the phrase "the head or heads of any department of the government" was used in defining a group of positions or offices which were excepted from the operation of the Civil Service Law.

The Constitution provides (article V, § 9) that appointments and promotions in the civil service of the State, and of all the civil divisions thereof, including cities and villages, shall be made according to merit and fitness to be ascertained, so far as

practicable, by examinations, which, so far as practicable, shall be competitive. Offices and positions in the unclassified service fall into two classes: (a), those in which examination as a basis for appointment is impracticable, and (b), those in which the examination is provided for under the education law rather than under the civil service law. The legislature has regarded examination as impracticable as a basis for selection of the officers in the first group, including "the head or heads of any department of the government." The reason is found in the importance of the offices. The incumbents should be selected because of their well-known ability and responsibility and because their appointing officers are held by the electorate responsible for their acts.

In a city it is obvious that the heads of such departments as the department of public safety, the department of public works, etc., hold positions of vital importance to the welfare of the community and for their behavior in office, including the appointment of subordinates, the mayor who appoints them is held responsible by the people and his power of appointment should be unrestricted by any requirement for examination; but it is also obvious that the same is not true of a poundkeeper.

The charter of the city of Mount Vernon gives a list of officers to be appointed by the mayor (Laws of 1911, chapter 82, section 12). They are commissioner of public works, corporation counsel, city clerk, fire commissioner, commissioner of charities, health officer, one constable for each ward and the poundmaster. The fact that these are all mentioned in the same section or that they are all appointed by the mayor does not put them all in the same branch of the civil service. It is obvious that the fire commissioner is the head of a department. It is also obvious that a constable is not the head of a department and I think that it is almost as obvious that the poundmaster is not the head of a department.

I think "a department of the government" is meant by the legislature to indicate one of the important branches in which there are under the "head" a number of subordinate officers and employees. In cities the police department and fire department are obvious examples, but I do not think that every independent officer who does not happen to be subordinate to any other

officer is by reason of his independence the head of a department of the government.

Although the phrase "head of a department" was first used in the list of positions in the unclassified service with the consolidation of 1899, the phrase "head of a department" appeared in other parts of the civil service law considerably earlier, particularly in those parts of the statute forbidding political influence over subordinates. In one of the acts I find the phrase "no head of a department or other appointing officer" and it seems to me that this phrase gives us the key to what was in the mind of the legislature in putting heads of departments in the unclassified service. The heads of departments, as the legislature uses the phrase, are "appointing officers" and because of their power of appointment, the ability to exercise which is obviously not susceptible of test by examination, they have been placed in the unclassified service. This power of appointment rather than independence of action is really what justifies placing the head of a department properly in the unclassified service; and consequently by his power of appointment rather than by his independence of action must we judge whether a certain officer is or is not "the head of a department of the government" within the meaning of the phrase as found in section 9 of the Civil Service Law.

The poundmaster of the city of Mount Vernon has no power of appointment. The pound is not a department of the government and he is not at the *head* of anything. He is merely an officer appointed by the mayor and acting independently of any superior officer, subject to control only by the mayor's power of removal. It is perfectly clear to me that the office of poundmaster is in the classified service under section 9 of the civil service law and that the municipal civil service commission had no power to adopt the resolution quoted above and the resolution should be disregarded.

Dated, August 3, 1918.

MERTON E. LEWIS,

Attorney-General.

TO HON. JOHN C. BIRDSEYE, *Secretary, State Civil Service Commission, Albany, N. Y.*

SECTION 65 OF THE INSURANCE LAW — INSURANCE BROKER'S COMMISSION.

Section 65 of the Insurance Law prohibits an insurance company from paying to a licensed broker or agent a commission on insurance placed by him upon his own property or risk but does not prohibit the payment of a commission to a licensed broker where he is the employee of the insured named in the policy of insurance.

INQUIRY

Is an agent or a licensed broker prohibited from receiving a regular commission on business placed by him upon his own property or risk, and is a licensed broker prohibited from receiving a commission on business placed by him for his employer?

OPINION

The answer to the inquiry involves the construction or interpretation of section 65 of the Insurance Law as amended by chapter 141 of the Laws of 1918.

The material part of that section is as follows:

“No insurance corporation, association, partnership, Lloyds or individual underwriters authorized or permitted to do any insurance business within this state, or any officer, agent, solicitor or representative thereof, shall make any contract for such insurance, on property or risk located within this state, or against liability, casualty, accident or hazard that may arise or occur therein or agreement as to such contract, other than as plainly expressed in the policy issued or to be issued thereon; nor shall any such corporation, association, partnership, Lloyds or individual underwriters, or officer, agent, solicitor or representative thereof, directly or indirectly, in any manner whatsoever, pay or allow or offer to pay or allow *to the insured named in such policy or to any employee of such insured*, as inducement to such insurance, or after the insurance shall have been effected, any rebate from the premium which is specified in the policy or any special favor or advantage in the dividends or other benefit to accrue thereon or any valuable consideration or inducement whatever, not specified in the policy or contract of insurance.”

Certain agents and brokers' associations deliberately set to work to amend the Insurance Law so that an insurance agent could

not procure a commission where the property insured was his own, or procure a commission on insurance written by him where his employer was the insured. And so section 65 was amended by chapter 141 of the Laws of 1918 in order that this purpose might be accomplished.

The question is now presented whether the amendment deliberately made for that purpose prevents a broker from procuring a commission on property insured in his own name and on property insured by him for his employer.

Taking up the first question whether a broker is entitled to a commission when he is the insured named in the policy, it will be noted that said section 65 of the Insurance Law, as it now stands, states:

“Nor shall any such corporation (meaning the insurance corporation) * * * pay or allow the insured named in such policy * * * as inducement to such insurance * * * any valuable consideration or inducement whatever not specified in the policy or contract of insurance.”

Here the prohibition is directed against the insurance company. Further on in the same section there is a prohibition directed against the broker, his agent or representative, and provides:

“Nor shall any insurance broker, his agent or representative or any other person * * * pay it, allow or offer to pay or allow to the insured named in such policy * * * any inducement to such insurance, or any rebate from the premium which is specified in the policy.”

If the legislature had used the word “commission” in place of the words “any valuable consideration” or “inducement whatever” there would be very little room for doubt but that the object of the amendment had been accomplished. What did the legislature mean by the words “any valuable consideration”? I think those words were intended to include a commission, and certainly a commission is a thing of value.

The purpose of this legislation was to require insurance companies to give equal terms to be fixed in the policy to all insurers of the same class and to give special favor to no one. Its operation was directed against considerations and inducements to a contract

of insurance which are not specified in the policy. (McGee v. Felter, 75 Misc. 349.)

If a broker is allowed a commission on property insured in his own name then he procures his insurance for a sum less than his neighbor who is not an agent. There would in effect be a deduction from the premium the amount with the deduction not being stated in the policy. This is the very thing which the legislation sought to prevent. If an application for insurance was placed with some other agent the company of course will have to pay that agent for his services. Nevertheless, I think the legislature had the right to absolutely prohibit the payment of a commission to an agent who insured his own property and that seems to be exactly what the legislature undertook to do and has done as I read the statute quoted. The wisdom of the legislation is not under consideration.

My attention has been called to a letter written January 29, 1916, by the then counsel to the Superintendent of Insurance in which he held that as the law then stood a bona fide agent actually engaged in insurance business might obtain a commission upon premiums for policies written upon his own property. But that no doubt was the law before the amendment of this year which is now being considered.

The answer to the second question whether an agent may have a commission where he is the employee and the insured is the employer, is attended with more difficulty. In the first place the promoters of the legislation intended to prohibit an insurance company from paying a commission in such a case. That was the very object sought by the amendment. The statute says:

“Nor shall any such corporation, * * * pay * * * to any employee of such insured as an inducement to such insurance or after the insurance shall have been effected * * * any valuable consideration or inducement whatever not specified in the policy, or in the contract of insurance.”

While the payment of a commission to an employee where the employer is the insured named in the policy does not work a rebate from the premium or lessen the amount of the premium stated in the policy, still it must be recognized that there would

be a strong temptation on the part of the employee to give his employer the benefit of this commission or some part of it. As I said in considering the first question the words "any valuable consideration" must necessarily include a commission. The statute says that the insurance company shall not pay to any employee of such insured "as an inducement to such insurance or after the insurance shall have been effected, * * * any valuable consideration." This would seem to cover a case where the payment of the commission was not the inducement which prompted the insurance, and would prevent payment of a commission were it not for the words farther on in the section. These words are as follows: "Nor shall this section prevent any such corporation or other insurer * * * from paying commissions to a licensed broker who shall have negotiated for insurance * * *." It seems to me that these words have upset the objects sought to be accomplished by the legislature to prevent payment of a commission to an employee of the insured where the employee is a licensed broker. Certainly this exception controls over the rest of the act and permits a licensed broker to receive the commissions.

While the statute in question is crudely drawn and requires considerable scrutiny to determine just what is meant, still I think the object sought by the legislature was accomplished so far as the first question is concerned, but failed as to the second. I have not considered the question of its constitutionality but perhaps much might be said on this head. Until the courts pass upon this question, it is the duty of the State officials to assume it is constitutional.

I am, therefore, of the opinion that the amendment to said section 65 of the Insurance Law prohibits an insurance company from paying an agent or a licensed broker a commission on insurance placed by him on his own property or risk, but does not prohibit the payment of a commission to such broker where he is the employee of the insured named in the policy.

Dated, Albany, N. Y., September 10, 1918.

MERTON E. LEWIS,

Attorney-General.

To Hon. JESSE S. PHILLIPS, *Superintendent of Insurance,*
Albany, N. Y.

COMMITMENT OF BOYS UNDER SIXTEEN YEARS OF AGE. SECTION 184, STATE CHARITIES LAW. SECTION 2184, PENAL LAW.

Male persons under sixteen years of age, convicted of crime in the rural counties of the State can be committed to or received at the House of Refuge established by the managers of the society for the reformation of juvenile delinquents in the City of New York, whenever such institution is willing to receive them.

INQUIRY

Can boys from Cayuga county, under sixteen year of age, be received in the New York House of Refuge if the State Industrial School at Industry is over-crowded?

OPINION

There is conflict between the provisions of section 184 of the State Charities Law and section 2184 of the Penal Law, in relation to the commitment of boys under sixteen years of age, convicted of crime, so far as the two sections apply to the commitment of boys convicted of crime in rural counties is concerned.

Section 184 of the State Charities Law provides:

“Male children under the age of sixteen years may be committed from the rural counties of this state to the state agricultural and industrial school, at Industry, or the house of refuge established by the society for the reformation of juvenile delinquents; but such children in the counties of New York and Kings shall be committed to the house of refuge in New York city, established by such society.”

Section 2184 of the Penal Law provides:

“When a male person under the age of twelve years is convicted of a crime amounting to a felony, or where a male person of twelve years and under the age of sixteen years is convicted of a crime, the trial court may, instead of sentencing him to imprisonment in a state prison or in a penitentiary, direct him to be confined in a house of refuge under the provisions of the statute relating thereto. Where the conviction is had and the sentence is inflicted in the first, second, third or ninth judicial district, the place of confinement must be a house of refuge established by the managers of the society for the reformation of juvenile delinquents in the city of New York: where the conviction is had and the sentence is inflicted in any other district,

the place of confinement must be in the state industrial school. * * * But nothing in this section shall affect any of the provisions contained in section twenty-one hundred and ninety-four."

It is stated in the communications of inquiry that the institution known as the State Agricultural and Industrial School at Industry is over-crowded and cannot at present receive boys under sixteen years of age, but the House of Refuge for Juvenile Delinquents in New York City has a capacity for 1,000 with only 621 inmates.

The Industrial School at Industry was first established pursuant to the provisions of chapter 143 of the Laws of 1846, and was first known as "The Western House of Refuge for Juvenile Delinquents," and the managers were empowered to receive in such institution all male children under the age of 18 years and all female children under the age of 17 years, who should be legally committed thereto as vagrants or on conviction of any criminal offense by any court having authority to make such commitments. The acts did not make any distinction in reference to the territory from which the commitments were made.

By chapter 24 of the Laws of 1850 it was provided that the several courts having criminal jurisdiction within the 4th, 5th, 6th, 7th and 8th judicial districts could commit juvenile delinquents to the Western House of Refuge, and those convicted within the 1st, 2d, and 3rd judicial districts should be committed to the House of Refuge established by the Society for the Reformation of Juvenile Delinquents in the City of New York.

Upon the revision of the State Charities Law, chapter 546, Laws of 1896, it was provided by section 124 that all children under the age of 16 years committed as vagrants or upon conviction of any criminal offense from the "*rural* counties of this state" to the State Industrial School or the House of Refuge established by the Society for the Reformation of Juvenile Delinquents, but all children in the cities of New York and Kings were to be committed to the House of Refuge in New York City.

The same provision was substantially re-enacted by section 121, chapter 167 of the Laws of 1904, except that the word

"children" was preceded by the word "male" and since that time the State Charities Law has continued to provide that all male children under the age of 16 years from rural counties could be committed to either the State Industrial School or the House of Refuge for Juvenile Delinquents in the city of New York. Commitments of all male children under 16 years of age from New York and Kings counties were required to be made to the New York City House of Refuge. The act took effect June 1, 1904.

The section was again materially amended by chapter 449 of the Laws of 1910, and has since remained in the same condition as at present, and as hereinbefore partially quoted.

By chapter 676 of the Laws of 1881 (Penal Code), it was enacted by section 701 that all persons under the age of 16 years convicted of a crime could be confined in a house of refuge, and if the conviction was had in the 1st, 2nd or 3rd judicial districts the confinement should be in the House of Refuge for Juvenile Delinquents in the city of New York, and in any other district, in the Western House of Refuge for Juvenile Delinquents. The section closed with this sentence: "But nothing in this section shall affect the provision contained in section 713."

It will be noticed that the provision relating to the commitments follows quite closely the provisions of chapter 24 of the Laws of 1850, which was afterwards merged in the State Charities Law, which was changed in 1896 (Chap. 546), by directing that all commitments from rural counties could be in either the Western House of Refuge or the New York City House of Refuge.

The above mentioned section 701 of the Penal Code was amended by chapter 554 of the Laws of 1896, but the same provision in reference to commitments from the 1st, 2nd and 3rd judicial districts was continued and the same provision in reference to commitments from other districts was continued. The section was again amended by chapter 388 of the Laws of 1904, and the same distinction as to commitments was kept up. The act took effect on June 1, 1904, the same time that the amended section 184 of the State Charities Law took effect, and since that

time the apparent repugnancy in the two provisions has continued.

Section 701 of the Penal Code was incorporated in the Penal Law as section 2184, and has remained in that condition without change, except the 9th judicial district is added to the territory from which commitments must be made to the House of Refuge in the city of New York, and the further provision was included in such section.

“Where a male person of the age of sixteen years and under the age of eighteen years has been convicted of juvenile delinquency or of a misdemeanor, the trial court may, instead of sentencing him to imprisonment in a state prison or in a penitentiary, direct him to be confined in a house of refuge established by the managers of the society for the reformation of juvenile delinquents in the city of New York; under the provisions of the statute relating thereto.”

It will be observed that the new provision for the commitment of boys between the ages of 16 and 18 are all to be made to the House of Refuge in the city of New York whether they are convicted in a rural county or elsewhere, but that the old provision for commitments from the two distinct territories was not changed except to add the 9th district to the class from which commitments must be made to the New York City House of Refuge.

In tracing this legislation it becomes apparent that the conflict in the two provisions is largely the result of carelessness and the question now arises as to which act should prevail in reference to the commitment of male children under 16 years of age from the rural counties to the House of Refuge within the city of New York. I think it is apparent that the legislature overlooked the State Charities Law and the difference in the two acts has crept into the Penal Law through oversight, as it hardly is conceivable that two conflicting acts would have been enacted by design. “The law makers cannot always foresee all the possible applications of the general language they use and it frequently becomes the duty of the courts in construing statutes to limit their operation so that they shall not produce absurd.

unjust or inconvenient results not contemplated or intended." L. S. & M. S. Ry. Co. v. Roach, 80 N. Y. 344.

This question was raised during the term of Attorney-General Jackson, (report of 1907, page 569), and he held that the provisions of the Penal Code would prevail as it was the later enactment. We find that since that opinion was written both statutes have been amended and while the amendment to the Penal Law was the last in point of time, it was only amended by adding the 9th district, and the further provision in reference to the commitment of boys between the ages of 16 and 18 years. The amendment to section 184 of the State Charities Law was a revision and recasting of the whole of that section, and indicates a clear intention on the part of the legislature at that time, (1910) to allow commitments to be made from rural counties to either house of refuge, and I do not think that purpose was changed by the amendment to the Penal Law made in 1913.

It is provided in the last part of section 2184 of the Penal Law that "nothing in this section shall affect any of the provisions contained in section twenty-one hundred and ninety-four," and when we turn to section 2194, it is seen that a person under 16 years of age may, in the discretion of the court, be placed in charge of any suitable person or institution willing to receive him, so if the provisions of section 2184 are held to be prohibitive of sending children from rural counties to the House of Refuge in the city of New York, here is a broad exception and the courts are given discretion to send such boys to any institution willing to receive them. As the Western House of Refuge is over-crowded and the managers of the New York city house are willing to receive such children, and there being plenty of room in the latter house, it is clear that children from any part of the state may be committed to the New York City House of Refuge, as long as the managers are willing to receive them, even if the provisions of section 2184 of the Penal Law could be held to otherwise prohibit the commitment of children from rural counties to the New York city institution.

I am therefore of the opinion that boys under 16 years of age convicted of crime in the rural counties can be sent to the House of Refuge established by the managers of the society for the

reformation of juvenile delinquents in the city of New York, as long as such institution is willing to receive them.

Dated, September 16, 1918.

MERTON E. LEWIS,
Attorney-General.

TO EDWARD C. BARBER, *Superintendent of New York House of Refuge, Randalls Island, New York City.*

SALARIES OF MEMBERS OF THE COMMISSION FOR THE CARE OF THE FEEBLE-MINDED. CHAPTER 197, LAWS OF 1918. CHAPTER 151, LAWS OF 1918.

The Fiscal Supervisor and Secretary of the State Board of Charities are entitled to have audited and paid to each of them the sum of fifteen dollars for each and every day they may respectively attend the meetings of the Commission for the care of the feeble-minded, not, however, exceeding the sum of one thousand dollars to each, in any one fiscal year, in addition to the salaries which such officers receive for services rendered in their respective positions under the General Appropriation Act.

INQUIRY

Can the accounts of the Secretary of the State Board of Charities and the Fiscal Supervisors of State Charities be legally audited for payment by the State Comptroller at the rate of fifteen dollars per diem compensation for each day actually engaged by such officers upon the business of the State Commission for the care of the feeble-minded, as provided by chapter 197 of the Laws of 1918, provided the amount for either of them does not exceed the sum of one thousand dollars in any one fiscal year?

OPINION

By chapter 197 of the Laws of 1918, a new commission was established for the care of the feeble-minded, to consist of three members, one of whom should be a reputable physician, a graduate of an incorporated medical college, with at least ten years' experience in the actual practice of his profession, to be the chairman of the commission and to be appointed by the governor with the advice and consent of the senate, for a term of three years. "The other members of the commission shall be the

fiscal supervisor of the state charities and the secretary of the state board of charities."

The act added a new article, number 23, to the State Charities Law, and the sections thereof were numbered 480 to 486 inclusive. By section 481 it was provided:

§ 481. Compensation of commissioners. "The chairman of the commission shall receive an annual salary of five thousand dollars. The other members of the commission shall each receive fifteen dollars per day for each day's attendance at meetings, not to exceed one thousand dollars in any one fiscal year."

The act also directs how the chairman can be removed; how the office and clerical force of the commission shall be provided; the authority for and the use of an official seal by the commission; specifies the powers and duties of the commission; defines the persons who are to be included under the term "feeble-minded," and makes an appropriation of twenty-five thousand dollars for the purposes of the act.

The act became a law on April 13, 1918, and took effect July 1, 1918.

Pursuant to the provisions of such new article, the governor on or about July 2, 1918, appointed Walter B. James, M. D., as chairman of such commission, and it immediately organized and entered upon the discharge of its duties. The commission has visited different institutions and held meetings in various other places than in the capitol at Albany, and had conferences with men both within and without the state who are familiar with the many problems arising out of the care and treatment of the feeble-minded, and whose opinions the members deemed it necessary to secure in order to fully equip themselves for the duties of their respective positions. In doing so the various members incurred considerable expense which they have had to defray out of their personal funds.

By chapter 151 (general appropriation act), Laws of 1918, at page 240, an appropriation of \$6,000 was made for the salary of the fiscal supervisor of state charities, and at page 237 of

the same act, an appropriation was made for the salary of the secretary of the State Board of Charities at the sum of \$6,000.

By section 8 of the same act, page 449, it is further provided in part, as follows:

“ * * * Any appropriations made by this act for salary, compensation or expenses shall be the salary, compensation or expenses for one year of the officer, employee, office, board, department, commission or bureau for whom the same is appropriated, notwithstanding existing provisions of any other statute fixing the annual salary, compensation or expenses of such officer or employee or the expenses of such officer, board, department, commission or bureau at a different amount, except that this provision shall not repeal or affect any other appropriation act, passed in the year nineteen hundred and eighteen, appropriating money to pay, during such year or the fiscal year beginning July first, nineteen hundred and eighteen, the amount of an increase in the salary, compensation or expenses of any such officer or employee made by a law enacted in such year.”

The act became a law on April 4, 1918, and took effect immediately.

It has been intimated by the comptroller that the above quoted portion of section 8 would prohibit the auditing of the bills of the fiscal supervisor and secretary of the State Board of Charities, for the \$15.00 per day allowed to them by chapter 197, for each day's attendance at meetings of the board, as it is claimed “that the payment of such bills would constitute the payment of two separate and distinct salaries to the same officer or employee for the same services,” and that such payment is forbidden by that part of section 8 of the general appropriation act above referred to.

The amount allowed by chapter 197, to the fiscal supervisor and secretary of the State Board of Charities is for new and additional duties imposed upon them for entirely separate and distinct work from that which they are required to transact in their respective positions. The legislature provided for a commission for the care of the feeble-minded. It created work

which neither of such officers were required or expected to perform in the line of their usual duties, and was not in existence at the time of the enactment of the general appropriation act, and could not have been intended by the legislature to be covered by the salaries provided by such act. The salaries fixed thereby were intended to be the compensation of such officers for the services which they were required to render as such and not in compensation for work and duties to be imposed upon them by a later statute.

At the time of the passage of chapter 197, the Legislature had full knowledge of the provisions of the general appropriation act and knew that the positions of the Fiscal Supervisor and Secretary of the State Board of Charities were covered by the salaries named therein. With such knowledge they created a new commission, assigned such officers to new and additional duties in such commission and provided that they should be paid for such additional work the sum of \$15 for each day's attendance at meetings, not to exceed \$1,000 in any one fiscal year. The payment of this stipend cannot be tortured into two separate and distinct salaries to the same officers for the same services. One salary is for certain duties clearly outlined by statute, and the other, if it can be called a "salary," is compensation for other duties outside of their general work and provided by a separate and distinct statute passed at a later date by the same Legislature with full knowledge of its previous action. The intent is plain and manifest and the Fiscal Supervisor and Secretary of the State Board of Charities are clearly entitled to have allowed and paid to them the sum of \$15 for each day's attendance at meetings of the commission, not exceeding \$1,000 in any one fiscal year.

This is not the first instance in the State government where two separate offices have been established and provision made by statute for their being filled by the same individual, but none of them receive two salaries for the same work. In each case there are separate duties imposed and other work to be performed, from that required in the discharge of the functions of the main office.

It is evident that the Legislature deemed it important and essential for the best interests of the state to secure the services

of the Fiscal Supervisor and Secretary of the State Board of Charities, with their experience and knowledge of the conditions and needs of the feeble-minded, but could hardly ask them to assume the additional obligations and work incident to such commission, and defray their own expenses while acting with the same, without in some small way compensating them for the work and reimbursing them for their expenditures, hence the provision under discussion was included in the act. There can be no doubt but that the action so taken was in the line of economy, as the small amount allowed, even if the whole two thousand dollars is used up will be much less than the state would have to pay for the same services if outside parties had been appointed upon the commission instead of such officers.

I am therefore of the opinion that the Fiscal Supervisor and Secretary of the State Board of Charities are entitled to have their accounts for each day's attendance at meetings of the Commission for the Care of the Feeble-minded, audited, allowed and paid at the rate of \$15 per day, not exceeding \$1,000 each, in any one fiscal year.

Dated, September 18, 1918.

MERTON E. LEWIS,
Attorney-General.

TO HON. FRANK R. UTTER, *Fiscal Supervisor; Albany, N. Y.*

EXECUTIVE LAW, SECTIONS 102 AND 105 — NOTARY PUBLIC ACKNOWLEDGMENTS AND AFFIDAVITS.

A notary public has no power to take an affidavit or acknowledgment in a county in which he is not qualified, except for use in a county in which he is qualified. The qualification of a notary public will not validate an act done by him when he was not qualified to do it. The act of a notary performed in a county in which he is qualified may be received for record in any county in which he may be qualified at the time it is offered for record, whether or not he was qualified in that county at the time of performing the act.

INQUIRY

Has a notary public, appointed in a certain county and who has not qualified in a certain other county as provided in section 102 of the Executive Law, power to take the acknowledgment of

a deed in the second county when the deed is to be recorded (a) in the second county, (b) in the first county, (c) in a third county wherein the notary is not qualified under section 102 of the Executive Law, (d) in another State?

Would the situation be altered if, upon a date later than that of the execution and acknowledgment of an instrument, the notary were to qualify in the county wherein he had acted? In other words, is such qualification retroactive?

OPINION

Section 105 of the Executive Law defines the powers and duties of a notary public. After providing for the power to protest negotiable instruments it provides that in a county in and for which he shall have been appointed, and elsewhere as provided in section 102, he shall have the power to administer oaths and affirmations, to take affidavits and certify the acknowledgment and proof of deeds and other written instruments to be read in evidence or recorded in this state. It also provides that a County Clerk's certificate authenticating his signature shall not be necessary to entitle any instrument to be recorded in the county in which the autograph signature and certificate of appointment and qualification of such notary shall have been filed pursuant to section 102.

Section 102 provides that a notary public appointed for any of the counties of the state, upon filing in the clerk's office of any other county of the State his autograph signature and certificate of the County Clerk of the county for which he was appointed setting forth the fact of his appointment and qualification as such notary public * * * may exercise all the functions of his office in the county in which such autograph signature and certificate of the County Clerk are filed, with the same effect in all respects as if the same exercised in the county in which he resides and for which he was appointed.

A notary may take an acknowledgment under section 105 in the county for which he is appointed, or in any other county, for record in the county in which he is appointed or is qualified under section 102. He may take an acknowledgment under

section 102 in any county in which he has filed his certificate and signature, but no power is conferred upon him to act in a county in which he has not filed his certificate for the purpose of having his act recorded in any county in which he has not filed his certificate. The Legislature from time to time has extended the jurisdiction of notaries but that jurisdiction is still limited and no power has been vested in a notary to act in a county where he is not qualified unless he be acting *for* a county where he is qualified. So, if a notary be qualified in a certain county he cannot act in a second county in which he is not qualified for the purpose of having his act recorded in that second county or in any third county where he is not qualified, but he is specifically empowered by section 105 to act in any county for the purpose of having his act recorded in a county where he is qualified.

Until a notary or any other officer is qualified to perform an act, any attempt upon his part to perform that act is nugatory and will not become effective upon his later becoming qualified, for his power to perform the act dates only from the time of his qualification.

It sometimes happens, however, that a notary acts in a county in which he is qualified; thereafter he files his certificate in a second county and then offers the act (performed theretofore in the first county) for the record in the second county. In this case it should be received for record, for the act was valid when and where done and ordinarily would be receivable in the second county, if it carried a County Clerk's certificate authenticating the signature of the notary (a certificate which necessarily would have been made after the notary's act) and section 105 provides that a County Clerk's Certificate shall not be necessary to entitle an instrument to record in a county in which the autograph signature and certificate of appointment and qualification of such notary "shall have been filed pursuant to section 102 of this chapter." A certificate having been filed, the deed so proved is admissible to record without a county clerk's certificate.

Some of the other states of the Union will accept for record a deed proved before a New York notary without other evidence of his qualification than his seal and the date of expiration of his commission. Others require a County Clerk's certificate. But

no other State attempts to confer upon a New York notary powers greater than those conferred upon him by the State of New York. Consequently, if a notary acts in a county for which he was not appointed and in which he has not qualified, under section 102, his act is nugatory where performed and certainly would not be acceptable in any other State.

Dated, September 18, 1918.

MERTON E. LEWIS,
Attorney-General.

To JOSEPH M. CALLAHAN, Esq., *Clerk of the County of Bronx.*

CONSTITUTION—ARTICLE VII, SECTIONS 7-10—CANAL LANDS WITHIN FOREST PRESERVE AREA.

The provisions of the Constitution (art. VII, § 7) and of the statute (Conservation Law, § 62) defining the Forest Preserve, do not apply to lands within the Forest Preserve counties appropriated by the State from private ownership and paid for out of the proceeds of bonds issued pursuant to chapter 147 of the Laws of 1903, known as the Barge Canal Referendum Act, assuming that such lands have been appropriated in good faith for canal purposes.

SAME—CUSTODY OF SUCH CANAL LANDS.

Such lands are under the care, custody and control of the Superintendent of Public Works and not the Conservation Commission, and such Commission has no power to authorize a fish and game club to construct a rearing pool for the propagation of fish upon such land nor to permit the cutting of timber upon such lands by a military company for firewood.

INQUIRIES

1. Are the lands owned by the State within the Forest Preserve counties, which were appropriated pursuant to the provisions of chapter 147 of the Laws of 1903 for storage reservoirs at Hinckley and Delta "for the purpose of improving the Erie canal," including lands above the flow line at such reservoirs, a part of the Forest Preserve; and are such lands under the control and custody of the Conservation Commission?

2. (a) If so, has the Commission the authority to permit a fish and game club to erect a dam on any of such land for the purpose of creating a rearing pool for the planting of fry for the propagation of fish?

(b) Has the Commission the authority to permit Company F, 2nd provisional regiment, to cut trees for firewood during the coming winter on any of such lands?

OPINION

It appears by a communication from George D. Pratt, Conservation Commissioner, under date of July 27, 1918, that the land covered by the waters of the Hinckley and Delta reservoirs and adjacent thereto, including lands not covered by such waters, and all included in the acquisition of lands at those places, was appropriated by the State pursuant to the authority contained in chapter 147 of the Laws of 1903, for the improvement of the Erie canal, "and building storage reservoirs on the upper Mohawk near Delta and on West Canada Creek near Hinckley, with all necessary feeders for connecting these existing reservoirs with the improved canal." These reservoirs and the land not covered by water adjacent thereto, which was included in the appropriation, are all within the Forest Preserve counties. The Hinckley reservoir is located near Hinckley on the West Canada Creek, and at the point of its dam and for a considerable distance above this creek it forms the dividing line between the counties of Oneida and Herkimer. The lands appropriated for the construction of both reservoirs, above the flow line thereof are partially covered by timber and woods and it is upon this land that authority is asked to permit a fish and game club to erect a dam for the purpose of creating a rearing pool for the planting of fry for the propagation of fish and also permission is asked by the Adjutant-General to cut trees for fire wood during the coming winter upon such lands for the use of Company F, 2nd provisional regiment.

In 1885, the Forest Preserve was created by statute embracing "all lands now owned or which may be hereafter acquired by the State of New York within" certain counties and the area was extended by subsequent legislation (L. 1885, Ch. 283; L. 1887, Ch. 639; L. 1893, Ch. 332). By chapter 707, Laws of 1892, the Forest Commission was given the care, custody and control of the Forest Preserve. In 1894, the constitutional provision was adopted by the people and went into effect January

1, 1895. It became article VII, section 7 of the Constitution and provided as follows:

“ The lands of the state, now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed. ”

At the time of the taking effect of this section, the Forest Preserve included the counties in which both these reservoirs are located and in the absence of any other consideration, the lands appropriated for these reservoirs within the Forest Preserve counties came within the plain and unambiguous language of the Forest Preserve provision of the Constitution.

The constitutional provision with reference to the Forest Preserve marked the adoption of a permanent policy for the preservation of the Forest Preserve by including in the organic law a provision which had theretofore been evidenced only by a statute and was subject to amendment or abolition at the will of each succeeding Legislature.

There can be no doubt that the frequent and radical changes effected in the forest preservation laws by successive legislatures, strongly influenced the people to the adoption of the constitutional provision, and the incorporation therein of the essential features of forest protection, enlargement and preservation in a less mutable form than statutory law.

The manifest purpose of this constitutional amendment was to preserve the extensive area of wild lands in the northern counties of the State, forming the vast watershed between the Mohawk, Hudson, and St. Lawrence rivers, in its natural state, as a haven of refuge for the rapidly decreasing game, a resort of pleasure and health for all the people and to conserve the water supply for the many and important lakes and streams having their location and origin in the area sought to be protected.

Pursuing this course, laws have since been enacted designed to

sustain and advance this policy of forest protection and preservation which have been incorporated in what is now known as the Conservation Law.

Section 62 of that law defines the Forest Preserve as follows:

“The forest preserve shall include the lands owned or hereafter acquired by the state within the county of Clinton, except the towns of Altona and Dannemora, and the counties of Delaware, Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Oneida, Saratoga, St. Lawrence, Warren, Washington, Greene, Ulster and Sullivan, except

1. Lands within the limits of any village or city and
2. Lands not wild lands and not situated within either the Adirondack Park or the Catskill Park acquired by the state on the foreclosure of mortgages made to loan commissioners.” (L. 1916, Ch. 451, as amended by L. 1917, Ch. 266).

This section, it will be noted, follows closely the phraseology of the definition of the Forest Preserve as fixed by law at the time of taking effect of Article VII, Section 7 of the Constitution relating to the Forest Preserve.

We have then at the Hinckley and Delta reservoirs land in the Forest Preserve counties of Oneida and Herkimer precisely within the Forest Preserve area as defined on January 1, 1895, when the drastic provision of the Constitution became operative and as re-enacted in the Conservation Law now in force.

On the other hand, these lands were appropriated for canal purposes and purchased with funds raised pursuant to the authority of an act which before taking effect received the direct approval of the people upon a referendum. That these lands were acquired by the State for canal purposes solely and not in any sense to increase the Forest Preserve, there can be no question.

The work of constructing a canal system in this state was begun long before the work of preserving the forests. Prior to the Constitution of 1846, the State had constructed canals. The construction of these canals was the great public work of the early part of that century. By the Constitution of 1846, provi-

sion was made with reference to canal revenues and debts and against the sale, lease or other disposition of such canals.

The prohibition against the sale, lease or other disposition of the canals of the State is still contained in the Constitution, section 8 of article VII, as follows:

“The legislature shall not sell, lease or otherwise dispose of the Erie canal, the Oswego canal, the Champlain canal, the Cayuga and Seneca canal, the Black River canal; but they shall remain the property of the state and under its management forever.”

This inhibition, however, has been construed to prevent the sale, leasing or other transfer of the canals as a means of transportation and not as forbidding the sale of canal lands when actually abandoned for canal purposes. *Pelo v. Stevens*, 66 Misc. 35, 41; *Sweet v. The City of Syracuse*, 129 N. Y. 333, 341.

Hence the lands in question acquired for canal purposes must “remain the property of the state and under its management forever” so long as they shall be devoted to or connected with communication or transportation by means of the canal system of the State. Judge Foote in *Pelo v. Stevens*, *supra*, at page 41, expresses the opinion that “no doubt lands of the present canal rendered no longer useful for canal purposes may after the improvement is made be disposed of by the state under existing laws without infringing the prohibition of the sale of the canals provided the navigable communication intended by the Constitution is still preserved to the people.”

In 1894, at the very time of adding the Forest Preserve provision to the Constitution, there was inserted in the Constitution, a new provision relating to the canals of the State which became section 10 of article VII, and which provides as follows:

“The canals may be improved in such manner as the legislature shall provide by law. A debt may be authorized for that purpose in the mode prescribed by section 4 of this article, or the cost of such improvement may be defrayed by the appropriation of funds from the state treasury or by equitable annual tax.”

From this we may deduce that the Constitution makers gave equal dignity and force to the work of the canals and the Forest Preserve and with reference to the former, gave to the Legislature unlimited authority as to the manner of improving the canals.

It seems clear to me that this canal provision of the Constitution furnishes an exception to the Forest Preserve article and that the two must be read together. The Constitution must be construed as a whole. In seeking the intent of the Constitution, words absolute in themselves and the broadest and most comprehensive language may be qualified and restricted by reference to other parts of the Constitution or by the facts to which they relate. However direct, plain and unambiguous, considered by itself, the Forest Preserve section may be, if the canal provision is inconsistent with the literal and unrestricted interpretation of the Forest Preserve section, it is our duty to give adequate force to the canal provisions as well as the Forest Preserve provisions by harmonizing the two with each other as well as with the whole intention of the Constitution makers.

So far as the Legislature has made provision for the canal improvement and has appropriated lands therefor, such improvement must be deemed to be a separate and distinct public work and the lands purchased in good faith and sound discretion for canal purposes are canal lands and not part of the Forest Preserve. It is possible to see how the abuse of the canal provision of the Constitution might lead to evasion of the Forest Preserve provision but there is no evidence of bad faith or abuse of discretion produced here and for the purposes of this discussion, I shall assume that none exists.

Moreover, the referendum act (Ch. 147, Laws of 1903) under which these lands were acquired gave to the State officer charged with the duty of appropriation broad discretionary power to appropriate lands, structures and waters "the appropriation of which for the use of the improved canals and for the purposes of the work and improvement authorized by this act, shall in his judgment be necessary." In *Jerome v. Ross*, 7 Johnson's Chancery 315, 339, quoted with approval in *People v. Fisher*, 190 N. Y. 468, it has been held that the word "necessary" does

not mean absolute and indispensable or that without the use of the land in the given case, the work could not possibly go on. "There must, from the reason of the thing and the nature of the case, be great latitude of discretion in the selection of the lands and the materials."

All of the lands in question were paid for out of the proceeds of the bond issue authorized by the referendum act (L. 1903, Ch. 147). The carrying out of all of the basic provisions of this act must be deemed the condition precedent to the expenditure of these moneys. One of the basic provisions of a referendum act authorizing a bond issue is the constitutional requirement that it shall distinctly specify the single work or object for which the debt is to be contracted (Const., Article VII, Sec. 4). The specific work or object in this case was the canal improvement and the appropriation of lands therefor, including expressly the lands for the Hinckley and Delta reservoirs. The lands in question could not be appropriated for the Forest Preserve with the moneys authorized for canal improvement and for the same reason, there can be no automatic diversion of such lands to the Forest Preserve after their appropriation for canal improvement. It would be a violation of the referendum act which the Legislature was expressly authorized to pass for the purpose of such canal improvement by section 10 of article VII of the Constitution. If such lands should later become a part of the Forest Preserve, it would be because of some other compelling reason, possibly such as the abandonment of the lands for canal purposes by formal action of the duly authorized board or officer of the State. But even if abandoned for canal purposes, the referendum act, as amended by chapter 244, Laws of 1909, expressly provides in section 5 thereof that where lands appropriated for the improvement are found no longer necessary for canal purposes, the Superintendent of Public Works with the approval of the canal board may reconvey the same to the owner from whom the property so deemed to be unnecessary for canal purposes was taken, his heirs, successors in interest or assigns, upon such terms as the canal board shall deem just. Whether this provision of the statute would be effective to dispose of these canal lands in

accordance with its terms in the face of the constitutional provision relating to the Forest Preserve, it is not necessary to decide at this time since there has been no abandonment of the lands in question for canal purposes.

The fact that some of the lands purchased for these reservoirs are not presently utilized for the purpose of flowing them does not preclude them from being considered canal lands. It is certainly capable of demonstration that the ownership of lands above the present flow line is valuable to the State for canal purposes and the custody and control of such lands should lie with the board or officer charged with the care, custody and control of the canal system. Common business prudence might well dictate the appropriation of lands at a reasonable distance above the flow line in order to afford suitable avenues of approach to all parts of the reservoir by those charged with its custody, to protect it from damage, to repair the reservoir, its dams and other structures, to obtain materials for such repair and improvement including the cutting of trees for that purpose, and to protect and improve the streams feeding into such reservoir.

Thus it seems to me that the Constitution read as a whole has given the Legislature full power to determine the manner of improving the canals of the State and that this power is not impaired by the Forest Preserve provisions of the Constitution. It remains to consider what disposition the Legislature has made with reference to the care, custody and control of the canal lands, structures and water.

The office of Superintendent of Public Works was created by section 3 of article V of the Constitution and by that section, the powers and duties of the office include the execution of all laws relating to the construction and improvement of the canals except so far as the execution thereof shall be confided to the State Engineer and Surveyor. This constitutional provision subject to the control of the Legislature, authorizes the Superintendent of Public Works to make rules and regulations for the navigation or use of the canals.

The scope of the work imposed upon the Superintendent of Public Works is more definitely fixed by the Canal Law, section 33, subdivisions 1, 10 and 12 of which provide as follows:

“General powers and duties of superintendent.—The superintendent of public works shall:

1. Have the general care and superintendence of the canals; enforce the faithful execution and observance of the canal law by all persons, and as a member of the canal board be entitled to one vote therein.

10. Make all such canals, feeders, locks, dams, aqueducts and other works as he deems the construction of every canal authorized by law to require; and enter upon, take possession of and use all lands, streams and water, the appropriation of which for the use of such canals and works is, in his judgment, necessary.

12. Make all necessary rules and regulations for the safe and speedy navigation, protection and maintenance of the canals and the structures thereof, for the government of all employees under his control engaged in their construction, improvement, repair and navigation, and for the payment for tools, materials and labor; * * *.”

There can be no question that these statutory and constitutional provisions give the Superintendent of Public Works, and him only, full power and authority to exercise general care of the canals of the State together with all their existing works and structures when the construction of such canals, works and structures is complete. In the construction and improvement of such canals, he shares to some extent the power and responsibility of the execution of the laws with the State Engineer and Surveyor; but the finished waterway available as a highway of commerce and all auxiliary structures necessary or desirable for the successful operation of such system are solely under his care, management and control.

Both reservoirs which, I understand, are completed, form a part of the canal system and so long as they are used as feeders to the Barge canal are subject to the control and under the care of the Superintendent of Public Works and no other State administrative officer can so interfere with such reservoirs or with the lands which were appropriated for such reservoirs or which are now or may hereafter be actually applied to such purposes as to

prevent the full and complete utilization of such lands for canal purposes.

The Conservation Law, section 50, prescribes the powers and duties of the Conservation Commission. That section provides in part as follows:

“ The commission shall, for the purpose of carrying out the provisions of this article, have the following power, duty and authority:

1. Have the care, custody and control of the several preserves, parks, and other state lands described in this article.

2. Make necessary rules and regulations to secure proper enforcement of the provisions hereof.

8. Examine the forest lands under the charge of the several state institutions, boards or other management for the purpose of advising and co-operating in securing proper forest management of such lands.”

This is the Forest Preserve article of the Conservation Law and section 62, which is found in this article and to which reference has already been made, describes the Forest Preserve. As we have already seen, the canal provision of the Constitution is of equal dignity and force with the Forest Preserve provision of the Constitution and should be treated as an exception to the latter so far as lands, structures and waters appropriated for canal improvement have been acquired in good faith for such improvement. Subdivisions 1 and 2 of section 50 of the Conservation Law therefore have no application to the lands in question connected with these two canal reservoirs.

Subdivision 8 of section 50, which is a new provision added by chapter 451 of the Laws of 1916, lends force by legislative construction to the argument advanced in favor of the proposition that the sole management of the canal lands lies with the Superintendent of Public Works. Subdivision 8 simply gives to the Conservation Commission the power of examination of forest lands under other management for the purpose of advising and co-operating rather than interfering with or controlling the use of such canal lands.

In the case of *People v. Fisher*, 190 N. Y. 468, the court expressly disclaimed any intention to determine the question of conflict of jurisdiction between the State officers involving the use of the State lands in the Forest Preserve counties which it might be desirable to devote to purposes other than as wild forest lands. The *Fisher* case, therefore, is not a controlling authority upon the question raised here. The Court of Appeals was able to say at that time and for the purposes of that case, that the State lands in question were wild forest lands within the Forest Preserve counties and that their retention as wild forest lands was for the purposes and objects directly connected with the Forest Preserve sufficiently to sustain the bringing of an action by that commission to recover damages for trespass or waste on such lands. No question of constitutional law was apparently raised involving the canal and Forest Preserve provisions of the Constitution and whatever authority the Forest, Fish and Game Commission may have had over such canal lands at that time, it is clear that under section 50, subdivision 8 of the Conservation Law as added in 1916, the present duty of the Conservation Commission is confined to examination and advice with reference to the management of forest lands where such lands have been placed under the charge of the several State institutions, boards or other management.

The lands appropriated for canal or reservoir purposes at Hinckley and Delta are under the sole supervision and control of the Superintendent of Public Works and are therefore under "other management" than the Conservation Commission. This is clearly revealed by reference to section 3 of article V of the Constitution under which the Superintendent of Public Works is charged with the duties of management of this property and is given authority to make rules and regulations subject to legislative control for the use of the canals. It is also shown by the provisions of the statute, section 33 of the Canal Law, particularly subdivisions 10 and 12, by which the Superintendent of Public Works is given authority to "use" all lands, streams and water "the appropriation of which for the use of such canals and works is in his judgment necessary" and to make all necessary rules and regulations "for the safe and speedy navigation,

protection and maintenance of the canals and of the structures thereof."

The Legislature has provided in section 16 of the Canal Law that the Canal Board may with the consent of the Superintendent of Public Works grant permission "for the use of any of the State lands adjoining any reservoir or of any island or islands in any reservoir for a public pleasure resort and for the erection of buildings thereon, upon such terms, conditions, covenants and restrictions as the board may deem proper."

Provision has also been made in section 111 of the Canal Law for the leasing of surplus waters arising from canal improvements where such surplus water is not necessary for the navigation or operation of the canals upon the condition that such leases may be terminated whenever the Superintendent of Public Works shall deem the whole or any part of such water desirable for the purposes of such canals.

If these canal lands within the Forest Preserve counties are a part of the Forest Preserve and subject to the inhibition of the Constitution with reference to lands of the State within such counties being preserved forever as wild forest lands, it is plain that the above provisions of the Canal Law would be inoperative within the Forest Preserve counties in which most of these reservoirs and surplus waters would be found. These illustrations reveal to some extent the importance of the fundamental proposition involved in the determination of this question and while not decisive of the question tend to give pause in the determination of it. I would hesitate to hold that such provisions were in violation of the Forest Preserve provisions of the Constitution so far as the lands involved were located in the Forest Preserve counties in the face of such legislative interpretation that the canal system of the State is a great public work separate and apart from the Forest Preserve.

There have been opinions inclining to a qualification and restriction of the Forest Preserve provision of the Constitution. In an opinion for the State Historian given February 21, 1912, Attorney-General Carmody held that land acquired under authority of chapter 391 of the Laws of 1900, entitled "An act

to provide for acquiring and care of lands to commemorate the Battle of Lake George and making an appropriation therefor" did not upon the title of such lands vesting in the State become a part of the Forest Preserve and subject to the constitutional provision relating thereto although located within a Forest Preserve county. He said:

"I think where the statute authorizing the purchase of lands for the State, plainly indicated that such land is to be used for a definite purpose which is inconsistent with its use as wild forest lands, where such purpose is one which the State had for many years previous to the enactment of the law defining the forest preserve recognized as necessary or proper in promoting the ends of government, that the provisions of law defining the forest preserve should not be held to apply so as to bring it within the constitutional provisions relating to the forest preserve."

In the matter of the application of the Long Sault Development Company, 158 App. Div. 398, the question of the power of the Legislature to authorize the transfer to a corporation of the bed of the St. Lawrence river arose and at page 404, Justice Smith said:

"Said section 100 specifies all lands owned by the State within certain counties, with certain exceptions, as being a part of the Forest Preserve, but we do not think that the intent was thereby to include lands lying under the water in the St. Lawrence river which are separated by many miles from the lands above water owned by the State in this county. The constitutional provision refers to the lands of the Forest Preserve as 'wild forest lands,' and while this description might include lands under water owned by the State adjoining such 'wild forest lands,' it would hardly seem to include other lands under water at a distance from any forests whatever."

Upon appeal to the Court of Appeals, 212 N. Y. 1, Judge Collin at page 27, substantially agreed with the reasoning of the Appellate Division but the majority of the court condemned

the exercise of such power by the Legislature upon the ground that the State could not relinquish its sovereignty over navigable streams in such manner as to prevent its improving navigation, such conclusion being founded on the provision of the act in which land under water was sought to be transferred, to the effect that:

“Such navigation (of the St. Lawrence river) shall be preserved in as good condition as, if not better than, the same is at present.”

This clause of the act, it was held, would prevent any action by the State for improving the navigability of the river at the points involved. The court apparently did not consider the application of article VII, section 7 of the Constitution in reaching its determination except in the dissenting opinion of Judge Collin, who concluded that the lands under the river at the locality designated were not a part of the Forest Preserve as fixed by law when the constitutional provision was adopted.

In *People ex rel., N. Y. C. etc., R. R. Co. v. Walsh*, 211 N. Y. 90, application was made for a writ of mandamus to compel, among other things, the conveyance to the relator of certain lands in the town of Schuyler, Herkimer county, which were acquired for canal purposes. Herkimer county is a Forest Preserve county and the land in question was not within the limits of any village or city nor so far as appears in the record of the case was it land “not wild lands” acquired on foreclosure of loan commissioners’ mortgages. The unusual character of this appropriation is indicated by observations in the brief of the defendants-respondents in the Court of Appeals where it is said:

“In order to secure the required elevation of its bridge over the canal it is considered necessary that the embankment east and west of the blue line of the canal be widened at the base; and inasmuch as the railroad company had not sufficient width in its right of way to accomplish this, the contract provides that the state shall acquire *from third parties* two strips of land on either side of its tracks and extending over the canal and several hundred feet east and

west of the blue line of the canal and convey the same to relator.

In other words, these parcels are to be acquired not for canal purposes but merely in order to negotiate a settlement of the claim of the railroad company."

Neither in the briefs of counsel nor in the opinion of the court was the application of the Forest Preserve section of the Constitution to the lands there in question considered. Nevertheless here was land owned by the State not within the exceptions of the definition of the Forest Preserve but on the contrary precisely within the limitations of that definition so far as location and character were concerned. The opinion in this case therefore cannot be considered as a binding authority upon this proposition.

In 1905, Attorney-General Mayer in treating of the clearing of forests to prevent fire said:

"It was the clear intention of the Constitution to prevent the sale of timber but I think that the state in the exercise of its police power has the same right to protect a citizen resident in the Adirondack region from the danger of a burning forest, or of a forest which having been burned, is a continuing menace, in precisely the same way that the State or its municipalities, through proper agencies, may destroy a burning building or tear down the walls of a building which has been burned. In other words, I am of the opinion, that it was never intended that the constitutional provision should prevent the State from exercising the highest attribute of sovereignty — the protection of the life and the property of its citizens. Had the officials themselves undertaken at the State's expense, the clearing of the forest at the points of danger for the purpose of protecting life and property, the difficulties which ensued through the methods adopted and to be hereafter referred to, would not have occurred and it is safe to say that there would have been no criticism of such a course by thoughtful citizens." (Opinions of Attorney-General, 1905, pages 247, 253.)

If it can be held to be outside the spirit and intent of the Forest Preserve provision of the Constitution to carry on governmental work recognized as necessary or proper in promoting the ends of government such as the erection of a battlefield monument or disposing of lands under water far removed from wild forest lands or exercising the police power of the State in the protection of the life and property of citizens, I am of the opinion, after carefully considering the letter and the purpose of the Forest Preserve provision of the Constitution in connection with the canal improvement provision of the Constitution, that the lands at the Hinckley and Delta reservoirs including the lands between the flow line and boundary of the area appropriated are not a part of the Forest Preserve and that the provisions of the Constitution defining the Forest Preserve should not be held to apply to such lands. Moreover, I am of the opinion that under the statutes relating to the canals and the forests, the lands in question are under the care, supervision and control of the Superintendent of Public Works and not the Conservation Commission.

Article VII, section 7 of the Constitution, relating to the Forest Preserve, was amended in 1913 by the addition of the following:

“ But the legislature may by general laws provide for the use of not exceeding three per centum of such lands for the construction and maintenance of reservoirs for municipal water supply, for the canals of the state and to regulate the flow of streams. Such reservoirs shall be constructed, owned and controlled by the state, but such work shall not be undertaken until the boundaries and high flow lines thereof shall have been accurately surveyed and fixed, and after public notice, hearing and determination, that such lands are required for such public use. * * * * ”.

This amendment took effect January 1, 1914. Such change in the Constitution, it will be observed, was prospective and not retrospective. It applied thereafter to the construction of reservoirs on lands owned by the State in the Forest Preserve at the time of such construction. The reservoirs in question at Hinckley and Delta were built on lands acquired prior to 1914 by the use

of canal moneys for canal purposes and the lands so used were not carved out of the State lands already owned by the State within the Forest Preserve. It is my opinion that the amendment taking effect January 1, 1914, cannot be construed as relating to the reservoirs in question but to such reservoirs as might thereafter be constructed on lands already owned by the State within the Forest Preserve and a part of that preserve. It did not modify the power of the Legislature to acquire lands for canal purposes within the Forest Preserve counties but was intended as a limitation upon the Forest Preserve article in order that the Forest Preserve might be utilized as an additional source of relief for municipal water supply, for the canals of the State and to regulate the flow of streams.

Therefore, my answer to the first question is that the lands in question are not a part of the Forest Preserve but are canal lands under the custody and control of the Superintendent of Public Works, and it follows that the Conservation Commission has no authority to issue any permits for the use of such lands.

Dated. October 2, 1918.

MERTON E. LEWIS,
Attorney-General.

To:

HON. GEORGE D. PRATT,
Conservation Commissioner.

NEW YORK GUARD — ENLISTMENT OF MINORS — PARENTS' CONSENT.

Minors above the age of sixteen may be legally enlisted in the New York guard without the consent of their parents.

INQUIRY.

Assuming that the regulations contain no such requirement, is it legally necessary to secure the consent of parents to the enlistment in the New York guard of young men between the ages of sixteen and twenty-one?

OPINION.

The Constitution of the State of New York, after defining the militia, provides: "The legislature may provide for the enlist-

ment into the active force of such other persons as may make application to be so enlisted." (Article XI, Sec. 2).

Section 42 of the Military Law (added by Chapter 239 of the Laws of 1918) provides: "The qualifications for, and term of enlistment in, the New York guard and the form of oath to be taken upon enlistment shall be prescribed in regulations."

The Constitution authorizes the Legislature to provide for the enlistment of persons not members of the militia, and the Legislature, by providing that the qualifications for enlistment shall be prescribed in regulations, delegates to the military authorities the power and duty of determining those who may and those who may not be enlisted. The military authorities have provided by regulations that citizens and those having declared their intention of becoming citizens may be enlisted if over the age of sixteen years.

Section 95 of the Military Law as amended in 1917 provides that the qualifications for enlistment in the *national* guard shall be the same as those prescribed for enlistment in the regular army. But the New York guard is not subject to all the limitations of the national guard, for section 42 of the Military Law, while it carries the general rule that the provisions of the Military Law in respect to enlisted men of the national guard shall apply to enlisted men of the New York guard, goes on to say: "Except as otherwise prescribed by this article" and the same section as quoted above otherwise prescribes the qualifications.

It has been customary in the New York guard to require the consent of a boy's parents before enlisting him. This undoubtedly grew out of the custom which originated in the national guard under section 95 of the Military Law which formerly provided, among other things that: "No minor shall be enlisted without the written consent of his parent or guardian." It is to be noted that this language was eliminated from section 95 by the amendment effected by chapter 644 of the Laws of 1917.

The regulations of the New York guard provided, until recently, that parents' consent should be secured before enlisting any boy between the ages of sixteen and eighteen in the New York guard. (G. O. No. 23, A. G. O. 1918.) It seems that this regula-

tion has been or is about to be withdrawn for the Adjutant-General's inquiry is as to the right to enlist such boys without their parents' consent, in the absence of any such regulations.

Congress has regulated enlistment in the United States Army by acts passed from time to time but such acts have practically always provided in what cases the consent of parents is necessary to the enlistment of minors. Under some of the early statutes the enlistment of a minor was illegal unless made with the consent of his parents, while under others such consent was necessary only when the minor was under eighteen years of age. (5 C. J. 299).

In the navy and the marine corps there have been similar rules. (Id. 300).

Since an enlistment is not merely a contract but effects a change of status, it follows that as a general rule it is not like ordinary contracts voidable by an infant or by his parents or guardian. (5 C. J. 300).

The principles of the common law with respect to voluntary enlistment of minors are well stated in the case of *Lanahan v. Birge*, 30 Conn. 438-443, where the court says:

"It is a fundamental principle of national law, essential to a national life, that every citizen, whether of age to make contracts generally or not, is under obligation to serve and defend the constituted authorities of the state and nation, and for that purpose to bear arms, when of sufficient age and capacity to do so, and when such service is lawfully required of him. The power to enforce that obligation, so far as the necessities of the state may require, is an incident of state sovereignty, and the subject of state constitutional and statutory regulations. * * * * .

Enlistment is but another and less objectionable method of securing the military service required by the state and due from the citizen; and the same essential principles of public policy and necessity, which impose the obligation to serve, and confer the power to enforce that obligation, require that the minor who is subject to military draft, should be at liberty to enlist, when called upon in that form to render the military service which the state requires. It may indeed be for his

interest to do so, rather than be subject to draft, as it certainly is sound policy in the government that he should. But however that may be, the obligation to serve, and the right to require the service, exist and are paramount. What a minor can be compelled to do, he may contract to do, or do voluntarily; and if he is lawfully subject to military duty, and is lawfully called upon to enlist, his contract of enlistment is as valid and binding as that of an adult.

Although it is the policy of the law to give to a parent a right to the service and a control of the person of a minor child until he has attained the age which the law has fixed for his emancipation yet that right and authority are holden in subordination to those paramount rights and powers of the state which are essential to the maintenance of civil society and civil government."

Our State Constitution specifically authorizes the enlistment of persons outside the militia as therein defined and the principles affecting the voluntary enlistment of persons subject to draft will apply equally well to other persons whose voluntary enlistment is duly authorized in accordance with the constitutional provision.

Under the federal statutes where the consent of parents was required to the enlistment of minors, it was held that the enlistment of a minor without such consent should not be avoided by the minor but only by the parents the right being one specifically granted to the parent by legislation. It would follow that in the absence of legislation there is no such right. The Supreme Court of the United States said in the case of *Morrissey*, 137 U. S. 157-159:

"The age at which an infant shall be competent to do any acts or perform any duties military or civil, depends wholly upon the legislature. *United States v. Bainbridge*, 1 Mason, 71; *Wassum v. Feeney*, 121 Mass. 93, 95. Congress has declared that minors over the age of sixteen are capable of entering the military service, and undertaking and performing its duties.

An enlistment is not a contract only but effects a change of status. *Grimley's Case*, ante 147. It is not therefore, like

an ordinary contract, voidable by the infant. At common law an enlistment was not voidable either by the infant or by his parents or guardians. *The King v. The Inhabitants of Rotherford Greys*, 2 Dow. & Ryl. 628, 634; S. C., 1 B. & C. 345, 350; *The King v. The Inhabitants of Lytchet Matravers*, 1 Man. & Ryl. 25, 31; S. C. 7 B. & C. 226, 231; *Commonwealth v. Gamble*, 11 S. & R. 93; *United States v. Blake-ney*, 3 Grattan, 405, 411-413."

These and other authorities satisfy me that in the absence of a specific requirement in the statute or regulations that the consent of parents be obtained to enlistments of minors, such consent is unnecessary and an enlistment without it would be valid both against the enlisted man and against his parents or guardians.

October 7, 1918.

MERTON E. LEWIS,

Attorney-General.

TO LIEUT.-COL. WESTCOTT,

Acting The Adjutant General.

CODE OF CIVIL PROCEDURE, SECTIONS 1391 AND 1393 — STATE FINANCE LAW, SECTION 2-A — GARNISHEE PROCEEDING — EXECUTION AGAINST SALARY OF MILITARY OFFICER.

The salary of a military officer of the State of New York is subject to execution in garnishee proceedings under section 1391 of the Code of Civil Procedure, such officer being within the provisions of section 2-a of the State Finance Law. The pay of noncommissioned officers, musicians and privates is exempt from execution under Code of Civil Procedure, section 1393.

INQUIRY

Will execution lie against the military pay of an officer of the military forces of the State?

OPINION

Section 1391 of the Code of Civil Procedure provides for a proceeding commonly known as a garnishee proceeding for execution of a judgment which has been returned wholly or partly unsatisfied against the wages, debts, earnings, salary, income from trust funds or profits of the judgment debtor, where the amount of such wages, etc., is twelve dollars or more per week; ten per cent of

such wages, etc., being taken in execution from every payment made until the judgment, etc., are satisfied.

In the absence of specific provision making wages, salaries, etc., paid by the State subject to such execution, it has been universally held that a garnishee order could not properly be directed to a State officer. Attorney-General O'Malley rendered an opinion to the Comptroller to that effect in 1909 and in 1910 the Legislature added section 2-a to the State Finance Law. That section reads as follows:

"The salaries of all officers of the state, and the wages of all employees thereof shall be due from and payable by the state twice each month, on the first and sixteenth days thereof, except where such days fall upon Sunday or a legal holiday when such payments shall be made upon the succeeding business day. Said salaries and wages shall be subject to all the provisions of section thirteen hundred and ninety-one of the code of civil procedure applicable to any wages, debts, earnings or salary, as if the state and the said wages and salary due and payable by it had been particularly designated therein. The provisions of this section shall be deemed to supersede any other provision of this chapter or of any general or special law inconsistent herewith."

The section refers to "the salaries of all officers of the State," and I see no possible basis for argument to the effect that military officers are not included among "all officers of the State."

I am, therefore, of the opinion that salaries of military officers are subject to the provisions of section 1391 of the Code of Civil Procedure.

The pay of noncommissioned officers, musicians and privates in the military service of the State of New York, however, is specifically exempted from execution by section 1393 of the Code of Civil Procedure and, consequently, is not subject to garnishee proceedings.

Dated October 15, 1918.

MERTON E. LEWIS,
Attorney-General.

TO LIEUT.-COL. EDWARD J. WESTCOTT,
Acting the Adjutant-General.

TAX LAW — SECTIONS 221-B, 260, 330, 338 — INVESTMENT TAX — TRANSFER TAX.

Where bonds were issued under and secured by a mortgage upon real property within and without the State and a tax was paid prior to April 1, 1917, under section 260 of the Tax Law upon the entire amount of the mortgage, such bonds are not subject to taxation under Article XV of the Tax Law providing for tax upon investments, nor under section 221-b of the Tax Law providing for additional transfer taxes upon investments which have not paid "investment" or "secured debt" taxes.

STATEMENT

On October 1, 1909, the New York Telephone Company made a mortgage to trustees upon all its property wherever situated and all after acquired property to secure an issue of not more than \$75,000,000 of bonds. At the time of recording, a mortgage tax of \$250,000 was paid on the basis that \$50,000,000 of bonds had been issued, and later when \$25,000,000 more bonds were issued a further tax of \$125,000 was paid.

INQUIRY

Some of these bonds being appraised for taxation under article X of the Tax Law imposing a tax upon inheritance, and no investment tax under article XV of the Tax Law, nor secured debt tax under article XV of the Tax Law having been paid thereon and no local taxes having been paid thereon during the period they were held by decedent, are these bonds subject to the 5 per cent tax imposed by section 221-b of the Tax Law?

OPINION

At the time the mortgage was recorded the Tax Commission was urging the owners of mortgages covering property both within and without the State to pay recording taxes, not only upon the proportion of the debt represented by the security within the State but also upon the proportion of the debt represented by the security without the State, upon the theory that such payment would render the bonds entirely free from State and local taxation, except the bank, franchise and inheritance taxes. A question was thereafter raised as to whether the law authorized the

collection of the mortgage tax upon the proportion of the debt secured by property without the State and whether such voluntary payment would bring about a valid exemption as to that portion, and in 1916, when section 260 of the Tax Law was revised in many particulars, it was made to carry the provision:

“The mortgagor or mortgagee of any mortgage which covers property within and without the State may waive the determination provided for in this section and pay the tax upon the full amount of such mortgage or of any advancement thereon and thereafter the whole amount of such mortgage or advancement shall be exempt from taxation under the provisions of section two hundred and fifty-one of this article.”

In 1917, when article XV of the Tax Law was amended and section 221-b was added to article X, this language was dropped from section 260, evidencing the Legislature's intention to substitute the right to secure exemption by payment under article XV for the right to secure exemption by payment upon that part of a debt secured by property without the State, under section 260. But the Legislature did not intend that where a tax had once been paid upon an investment under section 260, it should again be paid under article XV. That article was amended in 1917, section 338 being made to provide:

“If a tax shall have been paid under a secured debt pursuant to former article fifteen of the tax law prior to May first, nineteen hundred and fifteen, or prior to April first, nineteen hundred and seventeen, *under article eleven of this chapter such debt* shall be exempt from taxation hereunder * * *.”

This indicates that under article XV a security upon which a tax has been paid under article XI before April 1, 1917, is not regarded as an investment for the purposes of taxation, even though it might be an investment within the definition of section 330 to the extent of the ratio of mortgaged properties within the State to those without it.

At the time of the amendment of 1917 to article XV, the Legislature also included a provision in the nature of a penalty

for those who did not submit to taxation under it by adding section 221-b to article X of the Tax Law, providing:

“Upon every transfer of an investment, as defined in article fifteen of this chapter, taxable under this article, a tax is hereby imposed, in addition to the tax imposed by section two hundred and twenty-one-a, of five per centum of the appraised inventory value of such investment, unless the tax on such investment as prescribed by article fifteen of this chapter or the tax on a secured debt as defined by former article fifteen of this chapter shall have been paid on such investment or secured debt and stamps affixed for a period including the date of the death of the decedent or unless the personal representatives of decedent are able to prove that a personal property tax was assessed and paid on such investment or secured debt during the period it was held by decedent. * * *.”

This was intended to bring about a taxation under article XV and not to apply to securities not taxable under article XV. For some reason, in enumerating exemptions, this section refers to those securities which have paid “secured debt” taxes and “investment” taxes but omits those which have paid taxes under article XI, though the latter are exempted by section 338 which was part of the same legislative act.

If section 221-b had been enacted at a different time from section 338, and had imposed a tax on all investments *as defined in section 330*, with only the exceptions provided for in section 221-b, I should be constrained to hold that payment of a tax under article XI would work no exemption under section 221-b. But it was part of the same act. The Legislature was trying to induce payments under article XV. Article XV specifically exempted bonds which had paid a tax under article XI before April 1, 1917, and it is clear to me that the legislature did not intend to tax them under section 221-b.

If section 221-b referred only to the definition in section 330, it would be clear that the bonds in question were “investments” in so far as they were secured by property without the State, and section 221-b does not carry a specific exemption for investments

which paid a tax under article XI. However, section 221-b does not refer to the definition in section 338, but says "an investment, as defined in article XV"—and as shown above, article XV specifically exempts securities on which taxes were paid prior to April 1, 1917, under article XI. So, such securities, not being taxable by article XV, are not really "investments as defined by article XV."

I conclude that the securities in question are not taxable under section 221-b.

Dated October 19, 1918.

MERTON E. LEWIS,
Attorney-General.

To HON. EUGENE M. TRAVIS, *Comptroller.*

**MORTGAGE TAX—AMOUNT OF TAX TO BE COMPUTED ON INDEBTEDNESS
SECURED WHEN LIEN ON REAL PROPERTY ATTACHES—TAX LAW,
SECTION 253.**

Where a supplemental indenture mortgages real property under the **terms and conditions of an original trust agreement which is secured by personal property only**, the mortgage tax must be computed on the amount of indebtedness which remains when the supplemental indenture is executed and the lien on real property created, not on the **amount of indebtedness secured at the execution of the original trust agreement.**

STATEMENT

Borden's Farm Products Company, Inc., executed on May 31, 1917, a trust agreement to secure the issue of notes of the corporation aggregating \$529,250 and pledged bonds and other obligations owned by the company, as collateral.

On the 24th of June, 1918, the notes secured by the trust agreement having been reduced to \$352,833.34, the company executed a supplemental indenture by which the personal property held as collateral was withdrawn and real property of the company was conveyed to the trustee for the purposes and subject to the terms and conditions of the trust agreement of May 31, 1917, "in all respects as if the real estate and property in this supplemental indenture described and mentioned had been and were in the said trust agreement fully and specifically set forth and described."

INQUIRY

Upon what principal amount of obligation is the mortgage tax to be computed? Is it to be computed on the sum of \$352,833.34, the amount of notes secured at the execution of the supplemental indenture, or is it to be figured on \$529,250, the principal debt or obligation secured at the execution of the original trust agreement?

OPINION

Whatever difficulty arises is due to the wording of section 253 of the Tax Law, which provides that the tax shall be imposed on each one hundred dollars or fraction "of principal debt or obligation which is, or under any contingency may be secured *at the date of the execution therefor* at any time thereafter by a mortgage on real property situated within the State."

If we regard the original trust agreement, subsequent to the execution of the supplemental indenture, as a mortgage on real estate, then the inquiry is, does the statute under such aspect require the payment of a tax on the principal amount of indebtedness secured on May 31, 1917, when the original trust agreement was executed, notwithstanding the fact that the principal amount of notes is reduced when the instrument becomes a mortgage on real property.

The trust agreement, as we have just noted, was not when it was executed a mortgage on real property and could not then have been recorded. That is to say, we find no provision in the Real Property Law entitling to record an instrument which does not create a lien on real property; nor do the mortgage tax statutes provide for recording and taxing an instrument which may *under a contingency* become a mortgage on real property. The only contingency spoken of in section 253 which is to be taken into consideration in computing a mortgage tax is the contingency in the principal amount of indebtedness which may be secured at any time by the mortgage. If the original trust agreement was entitled to record at all it was only after real estate had been brought in as security.

To repeat, the mortgage was not a mortgage on real property securing a principal amount of indebtedness "at the time of the

execution thereof " and if it became a mortgage on real property it can only fall within the second provision of the statute which commands that the tax must be computed on the amount of principal indebtedness which *at any time* after its execution is secured by the instrument. Such amount which is secured by real property at any time after its execution would be \$352,833.34, the amount of the notes secured when real property was brought in on June 24, 1918, as security.

The better view is to regard the supplemental indenture as the only instrument of the two which was or is a mortgage on real property. This supplemental indenture is an agreement between the Borden's Farm Products Company, Inc., and the Columbia Trust Company, as trustee, under which the trustee releases from the lien of the trust agreement of May 31, 1917, the personal property pledged thereunder and accepts certain real property in the city of New York which Borden's Farm Products Company, Inc. (the supplemental indenture states) *mortgages* to the trustee. This later instrument is in form and effect a mortgage on real property. On page 5, it contains the usual granting clause and then continues to describe the mortgaged property by metes and bounds. The terms and conditions under which such real property is to be held are recited as being those contained in the original trust agreement, which was a mortgage. In other words, the supplemental indenture is a new and separate mortgage of property of the company, which refers to the trust agreement to complete its terms. It does not seek to make, nor does it in law make the original agreement a mortgage on real property but merely incorporates as a part of the mortgage on real property the provisions which existed in the original trust agreement under which personal property only was held as collateral. The original agreement is drawn in and made part of the instrument called the supplemental indenture, not the supplemental indenture made part of the original agreement.

With the provisions of the original agreement thus incorporated in the supplemental indenture, the original agreement is entitled to record as part of the later executed instrument, the tax, however, being computed, as we have stated, upon the amount of indebtedness secured when the lien on real property was created,

which is the only amount of indebtedness that was ever secured to the trustee by a mortgage "on real property within the State."

Dated November 19, 1918.

MERTON E. LEWIS,
Attorney-General.

TO STATE TAX COMMISSION, Albany, N. Y.

PUBLIC HEALTH LAW, SUBDIVISION 4-B, SECTION 203.—CORPORATIONS, ADVERTISING.

A membership corporation incorporated under section 130 of the Membership Law, with a corporate certificate stating its objects to be, "to establish, maintain and operate a dispensary," holding a license under section 291 of the Public Charities Law is not a corporation within the purview of subdivision 4-B of section 203 of the Public Health Law, but cannot practice dentistry.

STATEMENT

The Old South Brooklyn Dental Dispensary, Inc., is a corporation created under the provisions of section 130 of article VII of the Membership Corporations Law with the approval of the State Board of Charities, which approval was granted at a meeting of the Board held February 14, 1917. The objects of the corporation as given in its certificate are: "To establish, maintain and operate a dispensary; and in connection therewith to own or lease real estate and personal property, necessary for the carrying on of said work." On February 14, 1917, a license was granted this dispensary in accordance with the provisions of section 291 of the State Charities Law. The Old South Brooklyn Dental Dispensary, Inc., has since that time carried on dispensary work at 139 Harrison street, in the Borough of Brooklyn, New York City. The work of the dispensary is limited to the practice of dentistry and for this purpose two licensed dentists are employed. For each ordinary dental operation, 25 cents is charged for adults, and 15 cents for children. In order that the facilities afforded by the dispensary for treating the teeth of school children and others might be well known, the dispensary has distributed cards, one of which is enclosed herewith, advertising the location of the dispensary and the prices at which work is done. The propriety of this advertising has recently been called

in question by representatives of the State Board of Dental Examiners.

QUERY

Is the Old South Brooklyn Dental Dispensary, Inc., a "corporation, company, association, parlor or trade name" within the provisions of paragraph B, 4, of section 10 of chapter 129 of the Laws of 1916, amending section 203 of the Public Health Law, and is its advertising, therefore, subject to the rules of the regents?

OPINION

Subdivision 4-B, section 203 of the Public Health Law prohibits the practice of dentistry under the name of a corporation, company, association, parlor or trade name, except by legally incorporated dental corporations existing and in operation prior to January 1, 1916. The clause, "legally incorporated dental corporations" has application to such corporations as were authorized by law to engage in the practice of dentistry prior to January 1, 1916. The Old South Brooklyn Dental Dispensary, Inc. was not organized until February, 1917, and for that reason could not be held to be one of the corporations excepted by the clause, "legally incorporated dental corporations." The last sentence of subdivision 4-B, section 203, concerning advertising by its terms has reference only to corporations authorized to practice dentistry and does not apply to the Old South Brooklyn Dental Dispensary, Inc. The Old South Brooklyn Dental Dispensary, Inc., is a lawful corporate name and its use by the company is not prohibited by that portion of subdivision 4-B, section 130 of the Public Health Law reading as follows: "Shall practice dentistry * * * under the name of a corporation, company, association, parlor or trade name," which precludes the use of a name other than the true name of the individual, company or corporation practicing dentistry. However, your statement that "work of the dispensary is limited to the practice of dentistry and for this purpose two licensed dentists are employed," and the advertising card attached showing the prices for dental operations and "no free work" presents a more serious question.

The company was organized "to establish, maintain and operate a dispensary," which is defined:

"For the purposes of this article, a 'dispensary' is declared to be any person, corporation, institution, association or agent, whose purpose it is, either independently or in connection with any other purpose, to furnish, at any place or places, to persons nonresident therein, either gratuitously or for a compensation determined without reference to the value of the thing furnished, medical or surgical advice or treatment, medicine or apparatus, provided, however, that the moneys used by and for the purposes of said dispensary shall be derived wholly or in part from trust funds, public moneys or sources other than the individuals constituting said dispensary and the persons actually engaged in the distribution of charities of said dispensary." (State Charities Law, Chap. 290.)

And generally

"1. A room or shop in which medicines are dispensed or served out.

"2. A public institution, primarily intended for the poor where medical advice is given and medicines furnished free, or sometimes for a small charge." (Century Dictionary.)

The articles of incorporation do not contain an intimation that the practice of dentistry as shown by your statement was to be carried on, and if it did the certificate could not have been accepted. This is indicated by the opinion of the Attorney-General upon the application of the Peoples' Optholmic Institute of New York to the State Board of Charities for a license pursuant to section 291 of the State Charities Law, by a corporation organized pursuant to section 130 of the Membership Corporations Law for the following purposes: "to maintain and conduct a dispensary for the treatment of diseases of the eye without charge to those who are unable to pay for the same * * * to examine and advise without charge such persons who are afflicted with diseases of the eye and cannot pay for the same. To prescribe and furnish glasses wherever necessary," where it was said, "but that statute, as I construe it does not sanction the practice

of optometry by a corporation under the misnomer that it is a hospital " (Report of Attorney-General 1913, p. 401). The practice of dentistry is not a business open to all persons but a personal right limited to those with special qualifications ascertained and certified after a course of study and an examination by a State Board appointed for that purpose, and there is no provision whereby a corporation can qualify for such practice (Public Health Law 190-203). It has been held that where a corporation could not qualify and practice a profession directly, it could not do so indirectly by employing licensed servants as that would be an evasion which the law would not tolerate (Matter of Co-operative Law Co., 198 N. Y. 479). I conclude, therefore, and it is my opinion that the Old South Brooklyn Dental Dispensary, Inc., if the statement is true, is assuming powers not conferred upon it by law and is practicing dentistry in violation of the provisions of the Public Health Law of the State of New York.

Dated, December 2, 1918.

MERTON E. LEWIS,
Attorney-General.

TO CHARLES H. JOHNSON, Esq., *Secretary, State Board of Charities, Albany, N. Y.*

MEMORANDA, COMMUNICATIONS AND REPORTS UPON APPLICATIONS FOR THE INSTITUTION OF PROCEEDINGS BY THE ATTORNEY-GENERAL.

In the Matter of the Petition of WILLIAM BRUNSSSEN, for the Commencement of an Action to Dissolve or Annul the CONFECTIONERS AND ICE-CREAM MANUFACTURERS PROTECTIVE ASSOCIATION OF THE STATE OF NEW YORK.

This is an application made by William Brunssen for the commencement of an action in the name of the People against the Confectioners and Ice-cream Manufacturers Protective Association of the State of New York for a dissolution of such corporation upon the alleged ground that it has suspended its ordinary and lawful business for at least one year or more, or for the annulment of such corporation pursuant to the provisions of article VII of the General Corporation Law.

APPEARANCES

Henry E. Stohldrieir, Attorney for Petitioner.

Henry Wendt, Attorney for Respondent.

Charles M. Travis, of Counsel.

FACTS

On December 16, 1901, an unincorporated association of the retail confectioners of the State of New York was organized under the name and style of "Retail Confectioners Protective Association of the State of New York," "to promote the common interests of the members, to establish and maintain more intimate relations between them and take united action upon all matters affecting the welfare of the retail confectionery trade." A constitution and by-laws were adopted; provision made for the election of officers; initiation fee and annual dues fixed, and an oath administered to every person admitted to membership.

In 1908 it was decided by the members of such association to conduct an exhibition at Madison Square Garden in the City of New York, and it was deemed best to form a business corporation for such purpose. In accordance with such determination a

business corporation was formed by several of the members of the association under the corporate name of "Confectioners and Ice-Cream Manufacturers Protective Association of the State of New York" with a capital stock of \$1,000.

The purposes, as stated in the certificate of incorporation, are numerous and varied and included therein are the rights "To manufacture, buy, sell and deal in all sorts of goods, wares and merchandise, to manufacture, buy, sell and deal in all kinds of tools, implements, utensils and machinery; to buy, sell, lease or otherwise deal in real estate; to construct, buy, sell or lease buildings, plants or factories necessary for or convenient in the operation of its business; * * * to acquire by purchase, subscription or otherwise, and to hold or to dispose of stocks, bonds or any other obligations of any corporation formed for or then or theretofore engaged in or pursuing any one or more of the kinds of business, purposes, objects or operations above or hereinafter indicated * * * to conduct, operate, engage in and promote trade expositions or exhibitions, and to make all contracts necessary or convenient in the conducting, operating or promoting of such expositions or exhibitions, and to do and perform all acts appertaining thereto; to hold for investment or otherwise to use, sell or dispose of any stock, bonds or other obligations of any such other corporations; * * * " with divers other purposes not necessary to enumerate.

The 12th paragraph of such certificate contains the following provision:

"There shall be no division of the profits of this corporation among the stockholders thereof, until there has been an accumulation of such profits to the extent of fifty thousand dollars, except with the consent of stockholders owning not less than nine-tenths of the capital stock issued."

After the full organization of the corporation, certificates of shares of stock were issued to the various members who desired to purchase the same, each of which contained the following conditions:

"Shares of the Capital Stock of the Corporation cannot be sold, assigned, transferred or disposed of by any stock-

holder, without first offering the same for sale to the Corporation at a fair marketable price; and in case such stockholder and the Corporation cannot agree as to such fair marketable price, then each one can appoint an arbitrator, and such arbitrators appoint a third arbitrator, and the Corporation shall have the right to purchase at such price so fixed by such arbitrators and subject also to the provisions of Section 4 of Article VI of such by-laws, which are as follows: 'If a stockholder shall be indebted to the Corporation, the directors may refuse to consent to a transfer of his stock until such indebtedness is paid.'

The Capital Stock of this Corporation having been issued full paid for property pursuant to law, this certificate is issued and received with the understanding and the holder hereby stipulates that the directors of this Corporation may from time to time but at intervals of not less than six months make calls upon stockholders for contributions or assessments of not more than ten dollars per annum upon each share. The payment of such calls is to be optional with the holders of the stock, but the failure to pay any such call when due and payable, time being of the essence of this stipulation, shall be and be taken to be a relinquishment by the holder of the share or shares on which payment shall so fail to be made and this certificate, or any interest thereunder in regard to such shares shall be null and void."

The petitioner is the owner and holder of one of the aforesaid certificates.

Every member of the unincorporated association could become a member of the respondent corporation by the purchase of one share of the stock and paying therefor the sum of five dollars.

The organization of the unincorporated association has been kept up and at present a person cannot join either organization without purchasing a share of the stock of the respondent corporation and paying six dollars a year assessment, and the two organizations are thus closely allied and their interests are almost identical. The officers are the same and the monthly meetings are held at the same time and place.

The respondent corporation has, since its incorporation, regularly held annual stockholders' meetings. Directors have been regularly elected at such meetings and have held regular monthly meetings. The officers have been elected annually by the directors. It has been the practice of the corporation for some years, and is still continued, for the directors to hold their monthly meetings in the afternoon and report at an evening meeting on the same day, to the members of the corporation what action of public interest has been taken. At such evening meetings all subjects of general interest to the confectionery trade are discussed.

It was the original intention of the organization at the time of its incorporation, to hold public exhibitions every three years. It did hold public exhibitions in the years 1909 and 1912, and intended to hold one in 1915, but it was abandoned in that year on account of the European war. The corporation made over \$5,000 at the first exhibition and about \$1,000 at the second. With the money so obtained the respondent corporation loaned to the Varick Confectionery Company the sum of \$3,100 and took its note therefor which note is still held by the respondent and interest collected semi-annually thereon.

In 1914, or the early part of 1915, the respondent corporation either purchased or had manufactured a large number of "No spitting, no smoking" signs and sold many of them and still have a quantity on hand for sale. They were sold to members or any outside parties who desired to purchase the same. The sale of such signs has continued since 1914 to the present time.

Shortly after the incorporation of the respondent company, it invested some \$450 in the purchase of membership signs which are sold to the members and a second lot has also been purchased. The corporation is dealing in such signs whenever there is a call for the same.

The corporation also entered into contracts with certain carbonic companies, whereby it agreed that it would secure as many of its members as possible to purchase the liquid carbonic acid gas which they might require during the terms mentioned in the contracts with such companies signing the respective agreements, at the prevailing retail prices for such gas. In consideration of such promise on the part of the respondent corporation, the said gas

companies agreed to pay to the said Confectioners Ice-cream Manufacturers Protective Association of the State of New York, Inc., the sum of one cent per pound for all gas sold and delivered by said contracting gas companies to the members and stockholders during the life of the contracts, such payments to be made by the gas companies to the respondent corporation at the times named in the respective contracts which ran through the year 1917 and at least one of them until April, 1918.

Among the other activities of the respondent corporation, some of its members have been designated from time to time to procure legislation which the corporation deemed would be beneficial in the confectionery and ice cream business.

The company is financed mainly by the money received from sale of stock to members, and by assessments made at intervals of not less than six months, or not more than \$10 per annum pursuant to the terms of its by-laws and certificates of stock.

CONCLUSION AND REPORT

The application for the commencement of an action against the respondent corporation is based upon two grounds:

First, for a dissolution thereof pursuant to the provisions of article VI of the General Corporation Law upon the alleged ground that it has suspended its ordinary and lawful business for at least one year; and second, under article VII of the same law, for annulment thereof upon the alleged ground that the corporation has offended against the General Corporation Law by misuser of corporate privileges, deceitful practices, etc.

It is true that the main purpose of forming a business corporation was to afford the unincorporated associaton of the same name the means by which it could hold public exhibitions, every three years, and that it has not held any since 1912, but the purposes stated in its certificate of incorporation included various other forms of business and under it the corporation has transacted other business as shown by the findings of fact. Considerable of such other business has been transacted within the last year. Some of it is still pending and extending into the year 1918. The activities of the corporation have not been extensive, and it is apparent that it was never intended to be an active business

corporation except in co-operation with the unincorporated association of the same name. It has exercised some of its corporate functions within the last year, is still the owner and holder of a note against another corporation, and has entered into contracts with carbonic gas companies within the last year, at least one of which is still pending. The omission to hold public exhibitions since 1912 has been occasioned by existing conditions growing out of the European war, and I do not think that a suspension in the exercise of one or even all of its privileges in the present crisis of the world's affairs, is sufficient ground to justify the commencement of an action for its dissolution unless it also is shown that the corporation has abandoned all of its activities, without intention of resuming the same after normal conditions are restored. It is not required that a corporation must exercise all the powers granted it by its charter in order to retain its corporate life.

To justify the commencement of an action for dissolution there must be something more than a temporary suspension of some of its privileges; there must be a total cessation of work, either intentional or willful, for a period of at least a year.

"To work a forfeiture, there should be something wrong; and not only a wrong but one arising from willful abuse or improper neglect * * *. Corporations in this state do not hold their charters by so slender a tenure, but have a right to require of those who seek their destruction specific allegations of intentional or voluntary misconduct or such neglect as indicates an indifference to the demands of public duty, unless the act or omission is made by statute a cause of forfeiture, irrespective of its intent or character."

People v. A. A. R. R. Co., 125 N. Y. 519.

People v. Brislot & R. Turnpike Co., 23 Wend. 236.

"It is not every non-user that will furnish grounds for a forfeiture. To work a forfeiture there should be something wrong; and not only a wrong but one arising from willful abuse or improper neglect; such neglect as indicates an indifference to the demands of public duty."

Village of Fredonia v. Fredonia Nat. G. L. Co., 87 Misc. 494. Affirmed in 169 A. D. 690.

I do not think the respondent corporation is guilty of non-user or that an action for dissolution thereof could be sustained under the statute.

MIS-USER

It is claimed by the petitioner that the respondent corporation is conducting a trade association or membership corporation under a business corporation; that its main purpose is to build up and foster the interests of the unincorporated association of the same name; that the members purchase stock in a business corporation in order to become members of the unincorporated association; that its funds are used for illegal and fraudulent purposes; that no distinction is ever made between the members of the corporation and unincorporated association; that the officers and directors of the two organizations are identical; that the respondent corporation is practicing a fraud upon its members and upon the general public; that the certificates of stock contain stipulations in restraint of the power of alienation and in restraint of trade.

I am unable to see any fraud or impropriety in the alliance between the two organizations. The purpose of the unincorporated association, as stated in the facts was to form an organization for the mutual welfare of the members and to promote and protect the interests of the retail dealers in confectionery and ice cream; and the reason for the formation of the business corporation was largely to have, in connection with the unincorporated association, an organization with power and authority to transact certain lines of work which it was thought the unincorporated association did not possess. Combined with such rights and privileges were the several other purposes mentioned in the charter. That the two organizations should work in harmony does not appeal to me as a sufficient reason for the commencement of an action to annul the charter of the respondent. I am unable to find, and have not been cited to any authority which holds that such an alliance is illegal or a ground for annulment of the business corporation. The only difference in the names of the two organizations is that the letters "Inc." are added to the name of the respondent but each organization had its own

by-laws. In order to become a member of the business corporation, the person had to be the owner and holder of at least one share of stock. The par value of the stock was and is \$5 per share and contains a further condition that the holder will be liable to pay a contribution or assessment of not to exceed ten dollars per annum. In the unincorporated association, a member had to pay an initiation fee of \$2 and dues of \$6 per annum. Any person becoming a member of one organization could also become a member of the other by paying the amount required either by the purchase of stock in the one, or by paying the initiation fees and dues and taking the obligations required by the other. I am unable to find that respondent corporation or any of its members has ever practiced any fraud or deceit upon its stockholders. The petitioner testified that when he purchased his share of stock he supposed he was joining a trade association instead of a business corporation. A glance at the stock was sufficient to fully inform him of the nature and quality of the instrument and he has retained it since that time.

The identity of the names of the two organizations might be confusing to outside parties or persons unacquainted with the internal affairs and purposes of each, but I am unable to see how any harm could result or has resulted from the similarity of the names or the close connection between the two organizations.

The clause contained in the certificate of incorporation providing that shares of stock cannot be sold or assigned without first offering the same to the corporation at a fair marketable price, and the fixing of the price by arbitration is not in restraint of the power of alienation. It is specifically provided in section 10 of the General Corporation Law that the certificate may contain any limitation upon its powers, or upon the powers of its directors and stockholders which does not exempt them from the performance of any obligation or the performance of any duty imposed by law. Can it be said that the clause above referred to would exempt either the corporation or the stockholder from the performance of any obligation or duty imposed by law? The parties agree in the certificate that it shall not be sold to outside parties until the owner has first offered it to the corporation, and if they cannot agree upon its fair market value, they shall leave

it to arbitrators to fix the fair market value thereof. If the corporation does not want to buy it, the holder is free to sell it to anybody. If it does not want to pay the market value as fixed by the arbitrators the owner can sell it to anybody. This is a reasonable limitation expressed in the certificate and fairly within the provision of the statute.

Moses v. Saule, 63 Misc. 203.

New England Trust Co. v. Abbot, 162 Mass. 148.

It is not against public policy.

id. 63 Misc. 203.

A provision in the article of association or by-laws of a corporation prohibiting the sale of a certificate by a holder indebted to the corporation without the consent of directors unless the indebtedness is first paid would not be effective against a purchaser of a certificate without knowledge of the existence of such a clause.

Lyman v. State Bank of Randolph, 81 A. D. 367.

It must be borne in mind that the certificates of stock of the respondent all had the conditional clause plainly printed therein and that all holders of such stock had full knowledge thereof.

The clause in the certificates of stock that the failure of the holder to pay the annual assessments shall be taken to be a relinquishment of his rights thereunder and rendering his interest thereunder in regard to such shares null and void, was taken from a provision endorsed upon the stock certificates of incorporation of the Silver Islet Consolidated Mining Co. which was fully approved in Weeks v. Silver Islet Mining Co. reported in 55 Supreme Court Rep. 1. The court held that the stipulation was a contract between each stockholder and the corporation, binding alike upon both parties. This case was affirmed in 120 N. Y. 620, without opinion.

I can see no impropriety in the action taken by the officers of the respondent in their efforts to secure rulings and legislation that would be favorable to the confectionery trade but if corporate funds were improperly and illegally used for that purpose it might be a sufficient ground for the removal of its officers. No ground exists in that direction calling for an annulment of the respondent. The provision in the certificate that there shall

not be a division of profits until there has been an accumulation of \$50,000 is a reasonable regulation equally fair to all of the members, and is fairly within the provisions of section 10 of the Corporation Law.

After a careful review of the whole case, I am unable to find any evidence that the respondent has offended against or violated any provision of law, or exercised any privilege not conferred upon it by statute. I do therefore recommend that the application for the commencement of an action, either for dissolution of the corporation or annulment of the charter of the Confectioners and Ice-cream Manufacturers Protective Association of the State of New York, Inc., be denied.

Dated, January 15, 1918.

GEORGE A. FISHER,
Second Deputy Attorney-General.

Approved:

MERTON E. LEWIS,
Attorney-General.

In the Matter of the Petition of WILLIAM BRUNSSSEN for the commencement of an action to dissolve or annul the CONFECTIONERS AND ICE-CREAM PROTECTIVE ASSOCIATION OF THE STATE OF NEW YORK.

On reading and filing the report of George A. Fisher, Second Deputy Attorney-General, dated January 15, 1918, which has been duly approved by me, it is

Ordered, That the application of the above-named petitioner for the commencement of an action to dissolve or annul the above-mentioned corporation be, and the same hereby is denied.

Dated, January 16, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of ABRAHAM LEWENTHAL, a stockholder of the ROYAL JEWELRY MANUFACTURING Co. to

the Attorney-General of the State of New York for the commencement of an action to dissolve said corporation.

It is alleged in the petition in the above-entitled matter that the Royal Jewelry Manufacturing Co. has suspended its ordinary and lawful business for upwards of one year last past and during such period has not done any of the things which it is authorized by its charter to do, and the Attorney-General is asked to commence an action for the purpose of dissolving said corporation.

At a hearing held upon notice to all parties interested, the following appearances were made: Messrs. Lind & Pfeiffer by Alfred D. Lind of counsel for the petitioners, and Harry Sammet, Esq., for the respondents.

The Royal Jewelry Manufacturing Co. was incorporated under the name of Royal Metal Manufacturing Co. on January 4, 1893 for the following purposes, as stated in its certificate of incorporation, viz.: to manufacture, purchase, sell and deal in all kinds of metal goods and ornamental novelties. The name was subsequently duly changed to Royal Jewelry Manufacturing Co.

During the latter part of 1915, at which time the capital stock of the company was held in equal shares by Abraham Lewenthal, Isaac Lewenthal, Frederick Lewenthal and Benjamin Lewenthal, it was determined that the company should liquidate its business. Accordingly, a liquidation agreement was entered into, signed by all of the stockholders, in which it was provided that all of the merchandise held by the company be sold, with the exception of such as had already been ordered by prospective purchasers and also certain merchandise which was held by the company pending the outcome of controversies with its vendors. It was likewise provided that the right to use the name of the company should be sold at public auction, the purchaser thereof to be entitled to possession of all records and books of the company except such as were necessary in the settlement of its outstanding accounts. A further provision was made for the collection and distribution of the company's assets and a "liquidator" was nominated and the parties were to take or cause to be taken steps for the reduction of the capital stock of the company to five hundred dollars (\$500). Finally it was agreed that no action or proceeding to dissolve the corporation should be taken

except upon the written consent of all the parties to said agreement.

Pursuant to the terms of this agreement, an auction sale was had at which the right to use the name of the company was bid in, presumably in behalf of the petitioner and his brother, who now seek to use it as the name of a new corporation to be formed. In fact one of the grounds urged for action by the Attorney-General is that the new corporation will doubtless be liable to pay taxes to the State, while the old one which is practically dormant is not subject to a tax.

Upon the evidence submitted, it must be conceded that the corporation "has suspended its ordinary and lawful business for at least one year." Since the first part of December, 1915, its operations have been practically confined to the closing up of its affairs, and no meeting of directors or stockholders has been held since that time. However, it appears that there are various litigations pending affecting the company and that it also was asserting claims for refunds of revenues which are yet unsettled. An action between the petitioning stockholders and the respondents is also pending. The stockholders are engaged in quarreling among themselves, and it has been intimated by the testimony of the respondents that when these differences are settled, they will consent to a dissolution of the corporation.

By section 101 of the General Corporation Law, where a corporation has suspended its ordinary and lawful business for at least one year, an action for its dissolution may be maintained. By section 102, such an action may be instituted by the Attorney-General in the name and in behalf of the people. Where a creditor or stockholder submits to the Attorney-General a verified statement of facts showing grounds therefor, and the Attorney-General omits for sixty days thereafter to commence such action, such creditor or stockholder upon obtaining leave of the court, may maintain the action. Petitioner claims that he is estopped from taking steps for a dissolution under the terms of the agreement heretofore mentioned. It is not deemed necessary, however, to comment upon the effect of such agreement, or upon any other remedy that the petitioning stockholders may

have with respect thereto. Suffice it to call attention to the provisions of section 304 of said statute to the effect that the Attorney-General must bring such action "if in his opinion the public interests require that an action should be brought."

In *People v. Low*, 117 N. Y. 175, at page 195, the Court of Appeals said:

"This section shows that the legislature had in mind the public not private interests in authorizing the actions, and that the Attorney-General was expected to consult and regard public and not private interests in instituting them. He is to determine, in the first instance, whether the public interests require an action to be brought, and he may act upon his determination, subject to no control. But it could not have been intended that his determination should be final for all purposes, and that he could, in his absolute discretion, by a suit in the name of the people, and at their expense and risk, intrude into a mere private quarrel and carry on a litigation for purely private ends in which the people in no proper sense have a shadow of right or interest."

See also *People v. N. R. S. Co.*, 121 N. Y. 582.

It is difficult to discern any public interest which would warrant the bringing of the action requested. The remote contingency that a proposed corporation to be organized under the name of the existing company may pay taxes to the State does not seem to me to be sufficient. The present application seems to have arisen out of the quarrel among the stockholders which should be settled by themselves.

I would therefore, respectfully recommend that the application of the petitioner herein be denied.

Dated, February 6, 1918.

ALEXANDER T. SELKIRK,
Deputy Attorney-General.

Approved:

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of EDGAR E. COSTELLO for the commencement of an action in the name of the People against GEORGE E. MELVILLE to oust and exclude him from the office of Supervisor of the town of Corinth, Saratoga county, N. Y.

Application made by Edgar E. Costello for the commencement of an action in the name of the People, in the nature of quo warranto, against George E. Melville, to try the title to the office of Supervisor of the town of Corinth in the county of Saratoga, and to oust and exclude the said Melville from such office.

APPEARANCES:

Harold H. Corbin, Attorney for Petitioner.

Benjamin P. Wheat, Attorney for Respondent.

FACTS

At the general election held in the town of Corinth, Saratoga county, New York, on the 6th day of November, 1917, the petitioner and respondent were candidates for the office of supervisor of the above-mentioned town, the said Melville being the candidate of the Republican party and the said Costello being the candidate of the Democratic party and a candidate for re-election to such office.

The town of Corinth is divided into four election districts numbered respectively from 1 to 4 inclusive and the election of town officers in the towns of Saratoga is held at the same time as the general election in each odd-numbered year.

No irregularities are charged or claimed to exist in the reception or canvass of the ballots cast in any of said election districts in the town of Corinth, except it is alleged that in District No. 2 the count was improperly made.

While the vote was being canvassed in said district No. 2, one Thomas Gately, a Democratic watcher in said district, looked over the ballots and made a tally of the vote upon the office of supervisor. His tally did not agree with the number of votes cast and John P. Kelly, a Democratic inspector, then watched the ballots as they were being canvassed and kept a tally on the office of

supervisor. While doing so, one George Corlew, another inspector favorable to the candidacy of the petitioner, watched the count, and the count as thus made agreed with the poll book and was accepted by the chairman of the board and all parties, as accurate and correct, and the same was included in the return as the correct vote on the office of supervisor.

The said John P. Kelly, Thomas Gately and Fred C. Hasenfuss, all Democrats and favorable to the candidacy of Edgar E. Costello, testified that they examined the ballots and watched for marks upon the same and that they did not discover any marks or defects thereon which would render the ballots void.

Both candidates for the office of supervisor were present during the count upon supervisor, or at least at the close thereof, and nobody made any objection or protest against the method adopted by the board in taking the count upon the candidates for supervisor. All acquiesced therein and the result as ascertained was accepted by the board, candidates and watchers, as correct. At the time of the taking of the Kelly tally, Mr. Gately asked him, (Kelly), "if it was all right to do it that way" and admonished Mr. Kelly, a democrat, "don't let them get anything on you." Aside from this suggestion by Mr. Gately no one questioned or intimated that it was an irregular method or even criticised the manner in which Mr. Kelly kept the count.

That the returns made by the several inspectors of the four districts of said town of Corinth were recanvassed by the Justices of the Peace and Town Clerk of said town on the following day as required by statute and the said town board of canvassers entered the result of such canvass upon a statement made by them and filed the same in the town clerk's office. It appears therefrom that the vote in the four districts of the town upon supervisor, resulted as follows:

George E. Melville.....	415
Edgar E. Costello.....	398
Blank	69
Void	9
Total	891

This made a majority of seventeen for Mr. Melville, the respondent. Upon a canvass of the soldier vote in December, one vote was added to the total of each candidate for supervisor and the majority of seventeen still remains of record to Mr. Melville.

The certificate of election was awarded to Mr. Melville and within ten days after the election he took the oath of office and filed the bond required by statute. On January 1, 1918, he demanded the books, papers and property appertaining to the office of supervisor, from Edgar E. Costello, the former supervisor, and the same were delivered to him. Since the last above-mentioned date the respondent has been acting as the supervisor of the town of Corinth.

That on the 26th day of November, 1917, the petitioner herein obtained an order from Justice Salisbury permitting a re-examination of the ballots cast at such election to be had on the 30th day of November, at the town clerk's office in said town. Upon the return day of said order, at the time and place appointed by said order, the respondent appeared in person and by counsel. There was no appearance on behalf of the petitioner and after waiting some time the town clerk, Guy Ralph, announced that there would be no examination of the ballots without a new order, or without consent of both parties. Some three or four days afterwards, the petitioner with his attorney, appeared before the town clerk and asked to examine the ballots upon the former order. Mr. Melville was notified and personally appeared, but without his personal counsel. It was arranged, however, by telephone with Mr. Wheat, the respondent's counsel, that Carlton L. McMahan, who had been the Democratic candidate for District Attorney at the same election, being present, would look after the interests of Mr. Melville by observing the ballots and making notes concerning the same. Mr. Melville testifies that "at no time did he consider that Mr. McMahan was his attorney, or entitled to represent him in connection with the re-examination of said ballots, except in a formal way to observe and make a record of what he observed for the purpose of reporting the same to Mr. Wheat, deponent's attorney and counselor."

The only ballot box with voted ballots therein delivered to the town clerk on the morning of November 7th, the day after elec-

tion, was the one from District No. 4. The ballot box in District No. 3 was subsequently delivered to him, but the ballot boxes of Districts Nos. 1 and 2 remained at their respective polling places until after the order of Judge Salisbury was served upon the town clerk and he was obliged to go and get them from such polling places in order to have them present at the time fixed for the examination on the 30th day of November, 1917. The box from District No. 3 was sealed, but not locked, when delivered by the town clerk. Those from Districts 1, 2 and 4 were locked, but not sealed in any manner. The boxes in Nos. 1 and 2 were found in an unsealed condition when he found them at the polling places.

The ballot box from District No. 2 was left at the town hall in Palmer in the town of Corinth in an unsealed condition, from election until the 30th of November, as aforesaid. During that time, Thomas Brady and Edgar E. Costello, the petitioner, each had keys to said hall and daily access to said ballot box at all times between the dates above-mentioned.

The ballot boxes from District No. 1 were left at the town hall in the village of Corinth by the inspectors. Edward G. Varney, the janitor of the hall, gathered up the boxes from the polling place and placed them in a back room of said hall and locked the outside door of the hall. On Nov. 11th he moved the boxes into a small detached building in the rear of the hall and retained the two keys to said detached building at all times after the boxes were stored therein. Said box remained in said hall, or back room in the hall, or in the small detached building, in an unsealed condition from election day until they were taken possession of by the town clerk on the 30th day of November, 1917.

When the ballots were examined under the order of Justice Salisbury there were many found upon which erasures were made and others upon which names, marks or figures were discovered, and some with imperfect cross marks and others with the cross in the wrong place. Both parties kept a record of the protested ballots. After separating all ballots which had been objected to or protested by either party, a count was made of the ballots against which neither party made objection. Mr. Melville testified that such unprotested ballots gave him 390 votes and Mr. Costello 386 votes, thus giving Mr. Melville a majority of four

such unprotested ballots. Mr. Corbin testified that such count gave each candidate an equal number of 386.

There were twenty-three ballots found upon which it is alleged there were erasures which would render them void; thirteen of the twenty-three ballots upon which the petitioner claims were erasures, were cast for Costello, and ten for Melville. This leaves twenty ballots which were claimed to be void or defective by one or the other of the respective parties at the time of the examination thereof in the early part of December.

It was testified by three democrats, including Mr. Kelly, a democratic inspector, and Mr. Melville, that they watched the ballots as they were being counted by Mr. Kelly on election night, and all testify that they saw no erasures or marks thereupon which would render them void. Mr. Melville further testified that he was present at the examination under the order of Judge Salisbury, and that he then noticed marks of certain ballots cast in District No. 2, which he verily believes were not upon the ballots at the time they were counted on election night, and that erasures appeared upon ballots which he is certain were not there at that time, and that there were cross marks outside of and over the squares, and that there were scratches with a pencil which did not appear thereon at the time of the original canvass, and that it appeared plainly that some of such extra marks were made with a different kind of lead pencil from that used by the voters in marking their ballots, and called the attention of those present, including Mr. Corbin, to the difference in the lead pencil marking.

REPORT AND CONCLUSIONS

If I were permitted to disregard the facts and circumstances which preceded the re-canvass of the ballots cast in the town of Corinth under the order made by Judge Salisbury, I would recommend that an action be brought, not because the evidence shows a majority of the valid ballots found in the boxes at that time were in favor of Mr. Costello, but because it is apparent that upon such re-canvass upon the ballots as they were found, the result would be close and in doubt until some trial court had passed upon the disputed ballots, and that it would be but fair to both parties to have the questions settled by an impartial tribunal. Due

weight and consideration must be given to all the evidence, that which preceded the canvass under the order, as well as that which occurred upon such re-canvass under the order.

The count and tally made by Mr. Kelly in District No. 2 was somewhat irregular but it does not follow that it was incorrect and it should be borne in mind that it was made in the presence and under the watchfulness of two other democrats, one a democratic watcher, and also of Mr. Melville, the republican candidate, while Mr. Costello the democratic candidate was also present, and it was found to agree with the poll book and was accepted and acquiesced in by all the members of the board as correct. This count, combined with the other election districts of the town, gave Mr. Melville a majority of seventeen. To hold that this substantial majority was the result of erroneous canvasses in all four districts, participated in in each district by an equal number of democrats and republicans, would almost amount to a challenge of the honesty and good faith of all the inspectors, both democrats and republicans. We all know that mistakes will occur and if the vote were close, say anything under a half dozen majority, I would be inclined to believe that such a majority might be changed by the correction of mistakes that might have been made. When we consider that after this count was made, three of the ballot boxes were lying around the polling places and public halls in an unsealed condition from November 6th to November 30th, and then found to contain forty-three void or defective ballots, some with different lead pencil marks upon them, all of which had been passed and counted as good and valid ballots by four different boards of inspectors, half composed of men of the same political faith as the petitioner, and presumably in favor of his election, it seems to me that I should not recommend the commencement of an action to try the title to an office which seems to have been so strongly established by the election night canvass.

If an action was commenced it would be incumbent upon the relator to prove that the ballot boxes had been kept, as required by law, and that the ballots had been preserved undisturbed and inviolate.

People ex rel. Dailey v. Livingstone, 79 N. Y. 279-287.

People v. McClellan, 191 N. Y. 341-352.

Same case 124 A. D. 218.

Section 374 of the Election Law provides that after the canvass is closed the ballots shall be returned to the boxes from which they were taken "and securely locked and sealed, and deposited, by an inspector designated for that purpose, with the officer or board furnishing it," (in this case with the town clerk). "The boxes and packages shall be preserved inviolate for six months after the election" unless opened by order of a court. It is needless to suggest that the statute was not complied with in respect to any of the ballot boxes.

In *People ex rel, Dailey v. Livingstone*, supra, the court, at page 290, said:

"The statute requires the ballot box to be preserved undisturbed and inviolate, and it is incumbent upon a party offering the evidence to show that they had been so kept, not beyond a mere possibility of interference, but that they were intact to the satisfaction of the jury. The burden was upon the relator to satisfy the jury that the boxes had remained inviolate."

"Every consideration of public policy as well as the ordinary rules of evidence require that the party offering this evidence should establish the fact that the ballots are genuine. It is not sufficient that a mere probability of security is proved, but the fact must be shown with a reasonable degree of certainty. If the boxes have been rigorously preserved the ballots are the best and highest evidence, but if not, they are not only the weakest but the most dangerous evidence."

* * * * *

"Before the ballot boxes should be allowed in evidence to overturn the official count and return it should appear *affirmatively* that they have been safely kept by the proper custodian of the law; that they have not been exposed to the public or handled by unauthorized persons, and no opportunity has been given for tampering with them."

The ballot boxes were not kept as provided by statute, and there is evidence that they had been tampered with, from which a reasonable conclusion could be drawn that there had been

changes made between the canvass on election night and re-canvass under the order of the Judge, i. e., the evidence of four witnesses on election night that they watched for marks and erasures in District No. 2 and that there were none, and the statement made by Mr. Melville that upon the re-canvass he found markings upon the ballot with a different lead pencil, which last fact is undisputed, and the finding of some eighteen void and defective ballots in the box from District No. 2, upon which no marks or erasures were seen on election night, and which were counted as good and valid ballots at that time, and then, after the lapse of some twenty-four days the box in District No. 4 is found to contain eighteen ballots that were then and there pre-tested by the parties who were examining the same.

With all this evidence, the ballots found in the boxes are, in the language of the Court of Appeals, "the weakest and most dangerous evidence," that could be relied upon, and it is doubtful under the rulings of the Court, whether they would be admitted in evidence at all if an action were allowed to be commenced.

I do not deem it necessary to enter upon a discussion of the several void or defective ballots found in the boxes upon the re-canvass. The attorneys upon both sides have made their comments upon the several defective ballots and both claim that if such ballots are properly and legally counted with the undisputed ballots, their respective clients will receive a preponderance of the votes and be declared elected. I shall not attempt to pass upon the validity of such disputed ballots, for the evidence surrounding the original canvass, the condition of the ballots at the time they were first counted, the substantial majority found for the respondent, the custody of the boxes, the unsealed condition thereof and the evident changes that were made in the ballots between the two counts, lead me to recommend a denial of the application.

There is a heavy responsibility imposed upon the Attorney-General in the decision of these applications. He is clothed with a large discretion and it is just as much his duty to protect the man that has been awarded an office against attacks which he feels would not prevail, as it is to allow an action when he believes that there is reasonable prospect of success.

I do not think the petitioner has made out a prima facie case and I am strongly convinced that he would be unable to sustain an action if one were allowed to be commenced. I therefore recommend that the application be denied.

Dated March 6, 1918.

GEORGE A. FISHER,
Second Deputy.

Approved March 7th, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of EDGAR E. COSTELLO for the commencement of an action in the name of the People against George E. Melville to oust and exclude him from the office of Supervisor of the town of Corinth, Saratoga county, N. Y.

On reading and approving the report of George A. Fisher, Second Deputy Attorney-General, dated March 6, 1918, in the above entitled matter, I do hereby

Order and direct that the above application be and the same hereby is denied.

Dated March 8, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of EDWIN W. FISKE for the commencement of an action in the nature of *quo warranto* against EDWARD F. BRUSH to oust and exclude him from the office of Mayor of the city of Mount Vernon, New York.

This application is made by Edwin W. Fiske, who claims to have been elected to the office of Mayor of the city of Mt. Vernon on the 6th day of November, 1917, for the commencement of an action in the nature of *quo warranto* to oust and exclude Edward F. Brush who was awarded the certificate of election to such office, and is now discharging the duties thereof, from further exercising such duties, and to install the petitioner therein.

APPEARANCES

Arthur M. Johnson, Attorney for petitioner, with J. A. Zimmerman, of counsel.

George H. Taylor, Jr., Attorney for respondent, with James H. Cavanaugh, of counsel.

FACTS

At the general election held on the 6th day of November, 1917, there was to be elected in the city of Mt. Vernon a Mayor, with other city, county and State officials, and three candidates for the position of Mayor were placed in nomination by their respective parties as follows: Edwin W. Fiske, the then Mayor, was renominated by the Democratic Party; Edward F. Brush was nominated by the Republican Party and John E. Merriam as a candidate of the Socialist Party (the latter died in November, but as he only received about 250 votes in the whole city his candidacy does not enter into this controversy). According to the returns of the various inspectors of election in the city, upon what is referred to as the civilian vote, Mr. Brush had a plurality of 58.

Owing to the fact that a large number of the electors of the city were in the military and naval service the final certificate of canvass of the votes was not made by the board of county canvassers until the 27th day of December, 1917, and then made as of the 24th day of December, 1917. Such final certificate shows that 7,101 ballots were cast and upon the question of Mayor were divided as follows:

Edward F. Brush	3,316
Edwin W. Fiske	3,309
Fiske	1
John E. Merriam	250
Scattering	2
Blank	168
Void	55
<hr/>	
Total	7,101
<hr/> <hr/>	

A certificate of election was then issued to the respondent and he then qualified for the office of Mayor, and on the first of January, 1918, took charge of the office and has since continued to discharge the duties thereof.

At the close of election the ballot boxes containing the voted ballots and other boxes to the number of about 270 were delivered to the city clerk, the proper custodian thereof, some of them in an unsealed condition, and piled up in the waiting or anteroom of the tax receiver's office on the same floor of the hall in which the city clerk had an office. It is claimed that several of these boxes were unlocked and unsealed but there is no positive evidence that any boxes containing the general voted ballots were left unlocked except one, and that one having no lock was fastened with a hasp and ring and a bundle of paper run through the ring and sealed to the box. The keys have been retained by the city clerk. At least twenty-two of the large boxes containing the voted general ballots of the election of 1917 were not sealed over the slot or opening in the top made for the reception of ballots, and only two were sealed over the edge of the box. The soldier ballots were kept in boxes and packages in the vault in the office of the city clerk after the 18th of December, 1917, as soon as the same had been canvassed by the board. The keys to all the ballot boxes, including the keys to boxes containing the ballots marked "State, City and County" were all kept in the vault in the office by the city clerk, and delivered by him in January, 1918, to his successor in office. It was stated by the retiring clerk that it had been the custom to keep the ballot boxes in the anteroom of the receiver of tax's office for the six months required by statute.

There were several different parties who had access to the public office in the Lucas Building, in which several of the city offices were located. Out of this public office there are doors opening into the offices of the city clerk, city treasurer, and tax receiver, and the anteroom of the tax receiver's office where the ballot boxes were piled was entered from the public office or room, and this room was open to the public on each business day.

In the Third Election District in the Third Ward of said city there were thirteen votes cast for the office of Mayor by the

soldiers, sailors and marines and eight of such votes were for Mr. Fiske and five for Mr. Brush, but in making out the certificate of such vote the inspector through mistake or inadvertence transposed the figures so that the certificate gave Mr. Fiske only five votes and Mr. Brush eight. This error was carried into the final certificate hereinbefore referred to, which gave Mr. Brush a majority of seven over Mr. Fiske.

Another ballot was found among the soldier vote in the Fourth election district of the Fourth ward upon which the word "Fiske" only was written, and this ballot was reported by the board of canvassers but not allowed by them as a vote for Mr. Fiske in their certificate dated December 24, 1917.

Prior to date last aforesaid several proceedings were instituted in the courts by the parties interested and were finally carried through to the Court of Appeals and several disputed ballots were passed upon. By the decision of the Court of Appeals the vote upon the question of Mayor stands as follows:

Edward F. Brush	3,316
Edwin W. Fiske	3,310
Fiske	1
<hr/> <hr/>	

The court also held that it was without power to direct the opening of the ballot boxes and direct a recanvass of the ballots in the proceedings before it, and in the *per curiam* opinion by the Appellate Division, Second Department, the last paragraph reads as follows:

"We are clear that the ballots, when subsequently counted, were not 'protested', and therefore the inspectors should not have placed such ballots among 'protested, void or blank ballots.' Although the order treating such ballots as protested must be reversed, the facts thereby made to appear, namely, that the result of the canvass had been transposed, will furnish a further ground for this respondent to ask from the State officials to take a *quo warranto* proceeding."

The Court of Appeals affirmed the decision of the Appellate Division and the closing paragraph of its *per curiam* opinion reads as follows:

“ There is no authority in the statute or otherwise to make such an order, or where nothing is omitted from the statement of the canvass, and no ‘ merely clerical mistakes exist therein,’ to direct the inspectors to recanvass the vote as prayed for herein. With these statements we concur with the *per curiam* opinion of the Appellate Division. The order should be affirmed.”

The petitioner also instituted a proceeding to compel the board of canvassers to count the above mentioned ballot upon which the word “ Fiske ” was written for him for Mayor, and Justice Tompkins before whom the motion was made denied the application and wrote a short opinion which reads as follows:

“ In the Sixth District of the Fourth Ward, there was one ballot marked for ‘ Fiske ’ for Mayor. The intention of this voter was, I think, clearly manifest, and I think the inspectors ought to have given the vote to Edwin W. Fiske, but they did not. They returned it to the County Canvassers separately, and the relator, Fiske, now asks that the Court direct that he be given credit for this vote; and the Court would do it if it had the power, but it has not the power for the reason that it was not protested, and does not come before the Court now as a protested ballot, and for the reason already stated that ballot is not now the subject of review in this proceeding, and can only be reviewed in a quo warranto action.”

It is also alleged on the part of the respondent that two ballots, to wit: Harold Hagenbuckle and Arthur Neimeyer, who are shown to have voted for Mr. Fiske, were not legal and qualified electors of the city or the election district in which their votes were counted. The validity of the two ballots was passed upon by Judge Tompkins in a proceeding instituted by Mr. Brush to have them rejected, but the Court held, as the evidence then stood, that the said Hagenbuckle was a qualified voter of

the district in which he cast his ballot, but considerable additional evidence is produced upon this application tending to show that Mr. Hagenbuckle had not regained a residence as a voter in said city at the time of such election. Judge Tompkins also held that Mr. Neimeyer was also a resident of the election district in which he cast his vote.

It is also claimed that one John B. Hammer, a soldier, was entitled to vote from the residence occupied by his people at the time he entered the military service. His people thereafter moved to Philadelphia and were living there at the time of the election. Mr. Hammer voted at camp as a resident in the district in which his people lived at the time he entered the service, but the inspectors refused to count the ballot. It is proved that Mr. Hammer voted for Mr. Brush but it was claimed that his vote was illegal and consequently it was rejected by the board upon the canvass of the soldier votes.

REPORT

To recapitulate briefly, the claims of the respective parties stand as follows:

It is undisputed that according to the decision of the courts, so far as they have passed upon the validity of the ballots, the count stands:

Edward F. Brush	3,316
Edwin W. Fiske	3,310
Fiske	1

It is conceded that if the thirteen soldier votes cast in the Third election district of the Third ward are counted, as it has been proved they were cast, the parties would tie, that is to say, three votes should be deducted from Mr. Brush's total leaving it at 3,313, and three should be added to Mr. Fiske's total, making it stand at 3,313.

Mr. Fiske claims that the ballot upon which the word "Fiske" only was written should also be counted for him, giving him a plurality of one. Mr. Brush claims that the Hagenbuckle and Neimeyer ballots should be taken from Mr. Fiske's total vote,

which would leave him (Brush) with a plurality of two, and if the "Fiske" ballot is counted for the petitioner it will still leave him a plurality of one. He (Mr. Brush) also claims that the Hammer vote was improperly and illegally rejected, and if it had been received he would have a plurality of two.

The ballot boxes were not securely locked and sealed as required by section 374 of the Election Law. Many of those containing the voted ballots were delivered to the city clerk unsealed, but all were locked except one and that one was securely sealed and remained in that condition when it was last seen. The keys were in the custody of the city clerk and kept in the vault. There is no doubt but that the ballot boxes were somewhat carelessly left in the condition above indicated in the anteroom of the tax receiver's office, but there is no evidence produced that any of the ballots had been tampered with, and no charges made in the papers that any of the boxes had been opened except those opened by order of the courts. But the intimation is made that there has been the possibility that the ballots might have been tampered with, but without any evidence showing that the boxes had been tampered with the Attorney-General would not be justified in refusing to allow an action upon that ground. It is a question that should be left to the trial court to be dealt with as the proofs and circumstances would seem to require. The burden of proving the inviolability of the ballots will be upon the party offering them in evidence.

In *People ex rel. Dailey v. Livingston*, 79 N. Y. 279, the court used the following language:

"It was insisted that the boxes were not admissible for the reason that they were not properly kept. The statute does not prescribe the particular manner of keeping the boxes, but only that they shall be preserved undisturbed and inviolate. The evidence produced on the trial showed that they had been kept in the police department under the general supervision of the police officers. Members of the police force testified to the manner in which they were kept, and gave evidence tending to show their inviolability. Although it must be conceded that the security of the boxes was not

made so perfect as to preclude the possibility, and even some probability that access might have been had to them for improper purposes, yet I do not think the judge would have been justified in deciding as matter of law that they had not been preserved inviolate, and withdrawing the question from the jury. It was a question of fact for the jury under proper instructions from the court." (P. 288.)

In *People v. McClellan*, 191 N. Y. 341, the court at page 351 said:

"The proof given may tend to show that the box has been preserved inviolate and, therefore, justify the admission of its contents in evidence. On the other hand, there may be evidence tending to show that the box was or could have been tampered with, and there may also be testimony of the election inspectors and canvassers that on the night of the election the ballots in the box were exactly as returned by them in their statement of the count. The vital issue will then be what was the true count of the ballots on election night, and the exclusive determination of that question will belong to a jury."

I think it is very clear from the authorities that notwithstanding the boxes were not all locked and preserved in strict compliance with the statute, the inviolability of the ballots is a question of fact to be disposed of upon the trial of the action.

It has been held in several cases that the ballot boxes can be opened and the contents examined in an action in the nature of *quo warranto* and it is no injustice to either side of this controversy, considering the closeness of the vote, if such an action is allowed. I assume that neither candidate is desirous of holding the office unless he is elected by a preponderance of the votes cast by the legal and qualified voters of the city.

The language used by the court in the case of *Matter of Metz v. Maddox*, 189 N. Y. 460 at pages 469 and 470 is so applicable to the question under consideration upon this application that it will bear repetition here.

"It is plain that the contest for the present office will largely, if not principally, present questions of fact. The

count of the votes now in one of the boxes may differ radically from the vote returned by the canvassers. The proof given may tend to show that the box has been preserved inviolate and, therefore, justify the admission of its contents in evidence. On the other hand, there may be evidence tending to show that the box was or could have been tampered with, and there may also be the testimony of the election inspectors and canvassers that on the night of the election the ballots in the box were exactly as returned by them in their statement of the count. The vital issue will then be what was the true count of the ballots on election night, and the exclusive determination of that question will belong to a jury."

The questions raised by the parties as to the validity or invalidity of the ballots known as the "Fiske" ballot, the Hagenbuckle and Neimeyer ballots, as well as those known as the "City Chamberlain" and "Superintendent of the Poor" ballots, and the exclusion of the Hammer ballot, are all questions, so far as they remain open for consideration, for the trial court, and I do not think it is the province of the Attorney-General to attempt to pass upon them upon this application upon affidavits.

The Attorney-General is not concerned in the question as to who is to be Mayor of the city of Mount Vernon, neither is it his duty to pass upon the ballots, or right of the above mentioned parties to vote, but if he believes there is sufficient merit in the applicant's position to justify the prosecution of such an action, thus giving each party an equal chance to establish his claim to the office in a court of justice, it is his duty, in the exercise of the discretion vested in him by statute, to allow the action to proceed. The question to be settled by such an action is, which candidate received the greater number of legal votes cast at such election. (People ex rel. Deister v. Wintermute, 194 N. Y. 99.) The vote was very close and the decision upon one or two votes will tip the scales either way or cause a tie.

It is provided by section 9 of the charter of the city of Mt. Vernon that a special election must be held to elect any city officer where an officer shall not be chosen by reason of a tie vote. Such

elections are to be held within twenty days after the failure to elect.

It is provided by section 5 of the Public Officers Law that "every officer, except a judicial officer, a notary public, a commissioner of deeds and an officer whose term is fixed by the constitution, having duly entered on the duties of his office, shall, unless the office shall terminate or be abolished, hold over and continue to discharge the duties of his office, after the expiration of the term for which he shall have been chosen, until his successor shall be chosen and qualified; but after the expiration of such term, the office shall be deemed vacant for the purpose of choosing his successor" so it follows that if there was a tie in the vote there was no election (*People v. Van Home*, 18 Wend. 515) and Mr. Fiske, as the Mayor, would be entitled to hold over and discharge the functions of the office until a successor is properly elected, and in the event of a tie, it is claimed by the petitioner he could maintain an action in the nature of *quo warranto* to exclude and oust Mr. Brush from the office.

Much public interest has been aroused in the city of Mount Vernon concerning the election of a Mayor and is evidently continuing at white heat. There are charges and counter charges in the papers of attempted corruption and undue influence practiced upon the voters, and an action in *quo warranto* will clarify the atmosphere and set at rest a question which has agitated the public mind since the election and kept the people in a turmoil.

In any event, considering the closeness of the vote, the rulings by the several courts, and the facts and circumstances as they have been disclosed upon this application, I do recommend that an action be commenced upon the petitioner giving the security required by statute.

Dated March 12, 1918.

GEORGE A. FISHER,
Second Deputy Attorney-General.

Approved March 12, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of EDWIN W. FISKE for the commencement of an action in the nature of *quo warranto* against EDWARD F. BRUSH to oust and exclude him from the office of Mayor of the city of Mount Vernon, New York.

On reading the report of George A. Fisher, Second Deputy Attorney-General, in the above entitled proceeding, dated March 12, 1918, which has been duly approved by me, I do hereby

Order and direct that an action in the nature of *quo warranto* in the name of the People upon the relation of Edwin W. Fiske may be brought against Edward F. Brush to oust and exclude the said Brush from the office of Mayor of the city of Mount Vernon in the county of Westchester, State of New York, and I do hereby designate Arthur M. Johnson and Sidney A. Syme to commence and prosecute such action in my name as Attorney-General of the State of New York, but without compensation from the State for such services, and they having executed and delivered to me an assent to the terms and conditions prescribed by me for the commencement and prosecution of such action, and a bond in the penal sum of \$1,000 to save and protect the People against all damages and costs that may accrue therein against the State, if any, no further bond or stipulation is required.

Dated, March 12, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of ALBERT L. HALL for the Commencement of an Action in the Nature of *quo warranto* to Oust and Exclude CLARENCE L. FESSENDEN From the Office of Health Officer of the City of Fulton.

Albert L. Hall, M. D., claiming to be the legally appointed Health Officer of the city of Fulton has filed in this department a petition, asking for the commencement of an action in the nature of *quo warranto* against Clarence E. Fessenden, M. D., who is now acting as Health Officer of such city to oust and exclude the said Fessenden from such office.

APPEARANCES

Petitioner by D. P. Morehouse, his attorney.

Respondent by W. S. Hillick, his attorney.

FACTS

Prior to the 1st day of January, 1918, Dr. Albert L. Hall had been the health officer of the city of Fulton, and his term expired on the 31st day of December, 1917.

On the 21st day of December, 1917, Victor C. Lewis, the then mayor, and also the mayor-elect of the city of Fulton, did make out and file in the city clerk's office an appointment of the appointive officers for the city of Fulton for the term commencing on the 1st of January, 1918, and among such appointments was the following:

"To be City Physician and Health Officer, term commencing January 1st, 1918, Dr. C. L. Fessenden."

This appointment was followed by an acceptance of both positions by Dr. Fessenden and at the same time he filed with such acceptance constitutional oaths of office for both positions.

On the 2nd day of January, 1918, a meeting of the board of health of said city was held at the city hall, at which the mayor and all six of the members of the board of health were present and a resolution was offered by Mr. Clark, a member of the board, that Dr. A. L. Hall be appointed health officer of the city for the ensuing two years, at a salary of \$1,000 per year. This resolution was ruled out of order by the mayor and another member then requested that a paper signed by a majority of the members of the board be placed in the minutes. This request was approved by the mayor, but no vote appears to have been taken in reference thereto. The following is a copy of such paper:

"We the undersigned members of the Board of Health of the City of Fulton, State of New York, duly convened in regular session at the City Hall in said city at — P. M. on Wednesday the second day of January, 1918, do nominate and by our several united votes do appoint in accordance with section 20 of chapter 559 of the laws of 1913, and the amendments thereto, Albert L. Hall, M. D. health officer of

said city of Fulton for the term of two years from January first, 1918 at an annual salary of one thousand dollars per year payable in equal monthly installments.

“ Done at the City Hall in said city of Fulton in regular session of the board of health of said city at ——— P. M. on January second in the year 1918.

(Signed) G. P. CLARK, Member,

(Signed) S. D. KELLER, Member,

(Signed) N. H. HAVILAND, Member,

(Signed) FRED A. MILLER, Member,

(Signed) ELMER E. HARE, Member.”

On the 5th day of January, 1918, the said Albert L. Hall filed with the city clerk an acceptance of the office of health officer of said city and an oath of office.

Soon after the foregoing proceedings had been taken Dr. Fessenden entered upon the discharge of the duties of health officer, and is still acting in that capacity.

Both the petitioner and respondent are eligible to hold the office of health officer of the city of Fulton.

REPORT

The petitioner claims the right to hold the office of health officer by virtue of the written appointment, hereinbefore mentioned, signed by five members of the board of health and filed with the city clerk. The respondent claims the right to hold the two offices of city physician and health officer by virtue of an appointment from the mayor as hereinbefore stated.

The city of Fulton is a third class city incorporated under chapter 63 of the laws of 1902. By section 11 of such charter it is provided that certain offices therein named shall be appointive, and among such offices is that of city physician, and his term is fixed at two years, salary to be fixed by the board of aldermen, and to be appointed by the mayor.

It is provided in section 34 of such charter that the city physician, “ shall by virtue of his office, be the health officer of the city ” and he is to perform all the duties imposed by law upon such health officer, and also to visit the poor of the city as may be ill and give them medical attention.

The board of health is composed of three members appointed by the mayor and by section 177 it is again provided that the city physician shall also be the health officer, and shall be under the direction of the board of health, and shall perform such duties as may be required by said board of health, not inconsistent with the charter and the general laws of the State. It is also provided by such charter that no person shall hold more than one city office at the same time, except a commissioner of deeds.

There is some inconsistency in the city charter arising out of the prohibition above referred to, against any person holding more than one city office at the same time, and the two other sections thereof which provide that the city physician shall also be the health officer, but I think the two positive provisions vesting the two offices of city physician and health officer in the same person, must prevail. The duties of city physician and health officer are along the same line of work and one physician can easily discharge the duties of the two positions, and I think it is evident that the legislature by merging the two positions intended that they should be treated as one office, as the city physician is made health officer by virtue of his position. The two positions are compatible and merged in one man by the statute, and it seems clear that the legislature intended that one physician could hold both offices notwithstanding the prohibition contained in section 9 of the charter.

It is claimed on the part of the petitioner that the provisions of the charter were superseded by the public health law so far as the appointment of a health officer for the city of Fulton is concerned. It is provided by section 20 of the public health law that "in the cities, except cities of the first and second class, and such other cities whose charters otherwise provide" the health officer shall be appointed by the board of health of the respective cities for a term of four years. It is also provided in section 20 that in all cities, "except cities of the first and second class the Board of Health shall consist of the mayor of the city who shall be its president and at least six other persons, one of whom shall be a competent physician, who shall be appointed by the common council, upon the nomination of the mayor and shall hold office for three years." It will be noted in this last quoted sentence that no exception is made "to cities whose charters

otherwise provide." If the legislature in its desire to establish a uniform system of public health laws, intended that in all third class cities the board of health should consist of the mayor and six other appointed members, and as that is the last utterance of the legislature upon the subject and no mention is made of cities whose charter otherwise provides in that sentence, it could easily be construed that the provision of the public health law in the number and make up of the health board in third class cities, would supersede the provisions of the charters in such cities in that regard, but in the sentence of the same section providing for the length of the term and manner of appointment of the health officer, the cities of the third class, having charters which provide a different term and method of appointment of a health officer than that specified in the public health law, are specifically excepted from the operation of the general statute, and it is evident that the legislature did not intend to change the term or method of appointment of health officers in the city of Fulton and other third class cities whose charters provide a term and method different from the general act.

The rule is well settled that the provisions of a special or local statute will not be repealed or superseded by the provisions of a general statute if repugnancy exists, unless there is a clear and manifest purpose indicated in the general act to that effect, and again, that repeals by implication are not favored by the courts, and thus we have two well settled rules of law against the position of the petitioner. Instead of there being any purpose indicated in section 20 of the public health law to change the method of appointment or terms of the health officer in cities of the third class whose charters otherwise provide, we find such cities specifically excepted from the operations of the act; and if the provisions of the charters of such cities are repealed or superseded by the general act it is by implication, and if repeal is to be implied it is against the direct and positive exception of the general act to the contrary. In this connection I desire to call attention to the designation or appointment by which it is claimed by the petitioner he is entitled to hold the office of health officer. While the instrument states that the appointment is made under section 20 of the public health law it fixes the term at two years, the

length of term specified in the charter, but the term provided in section 20 of the public health law is fixed at four years.

I fully agree with the argument of the petitioner's attorney that the legislature intended to establish a uniform system for the improvement of the public health by the enactment of the public health law, and they made that system applicable to the whole state, except cities of the first and second class in the matter of the make up of the boards of health, and also excepted cities of the third class whose charters otherwise provided as to the length of term and mode of appointment of the health officers, and as to such cities they are excepted from the operations of the act in the above mentioned respects, and it is plain and evident that the legislature did not intend that the uniform system should apply to cities of the third class, in the matter of the length of time or manner of appointment of health officers whose charters otherwise provided. Another significant sentence is found in section 20 of the public health law which reads as follows:

“ The provisions herein contained as to boards of health, and for the appointment of health officers, shall apply to all towns and villages, whether such villages are organized under general or special laws.”

If the legislature intended that the Public Health Law should apply to all third class cities whether their charters otherwise provided or not, as to the method of appointment or term of office, of the health officers therein, it is quite improbable that they would have been left out of the above quoted broad and comprehensive provision, which is applicable to all boards of health outside of the cities of the State.

Attention has been called by the petitioner's attorney to three opinions written by General Carmody in 1913 which are claimed to be authority in favor of the petitioner's position.

The opinion under date of June 1913 (Report of 1913, page 386) related to the compensation of health officers, and Mr. Carmody held that Chapter 559 of the Laws of 1913 established a uniform system of health law, including the compensation of local health officers, and that such general act repealed by implication the charter of the city of Rensselaer relative to the

compensation of health officer. The provisions of the public health law relating to the compensation of health officers is found in section 21 and applies to all cities of the State excepting Greater New York, and no exception is made as to any city, other than New York, in the matter of compensation of health officers. All local and special statutes relating to compensation of local health officer are clearly and distinctly superseded by the provisions of section 21 and the Carmody opinion of June 13, was clearly justified.

The opinion under date of July 30, 1913 (Report of 1913, page 490,) related to the appointment and constitution of the local boards of health and the compensation of health officers, and Mr. Carmody held that the general act superseded all special acts in reference to the method and appointment of boards of health in all cities, except cities of the first and second class.

The opinion under date of November 22, 1913 (Report of 1913, page 664) was rendered upon an inquiry relating to the length of term of a health officer of the city of Fulton, and he held that a health officer of such city appointed by the local board of health organized pursuant to section 20 of the public health law, could hold such office for two years only, as the charter of the city prescribed the length of term, and that the charter provision would prevail over the general act, and closes the discussion upon that point with the following language:

“When the charter of any third class city prescribes any other or different length of term for the local health officer the length of such term is not disturbed or altered by the provisions of Section 20.”

After reaching a correct conclusion as to the length of the term of health officer in the city of Fulton, Attorney-General Carmody then proceeded to go beyond the inquiry, and held that the power to appoint a local health officer was vested in the board of health organized under section 20 of the health law, and his opinion closes with this conclusion:

“When the term of the present incumbent now occupying the appointive city office of local health officer in the city of Fulton ends by expiration of term or otherwise, the new

local board of health provided for in said section 20 has the power and authority to appoint a new local health officer in said city of Fulton for the term of two years as prescribed in the charter of the city of Fulton by section 11, subdivision 2, sections 13 and 275 of chapter 63 of the Laws of 1902."

The respondent's attorney calls attention to the fact that the opinion expressed in reference to the method of appointment was not within the range of the inquiry, and he therefore claims that the opinion was *obiter dicta* in that respect. In any event it is somewhat difficult to understand how different positions can be taken upon the same exception contained in the general act. The local board of health under the general act, "except in cities of the first and second class and such other cities whose charters otherwise provide" have the power to appoint a health officer for a term of four years, and it follows as a logical conclusion that the authority is still vested in the appointing power of all cities of the first and second class and other cities whose charters otherwise provide in that respect, and such appointments, as well as the length of terms of health officers, are to be made in the manner pointed out by the respective charters. I cannot read it in any other way, but that the same reasoning applies to the method of appointment that does to the length of the term. All of such opinions were written in 1913 before the opinion of the Appellate Division in *People vs. Gulvin*, hereinafter referred to, was reported.

In *people ex rel. Gulvin* 164 App. Div. 768, the sole question was whether the charter of the city of Geneva or the public health law would control the appointment of a member of the board of health, and the court held that the provisions of the charter would prevail over those of the general act, and at page 771, Judge Sutherland made use of the following language:

"Of course the intent of the Legislature must govern, and all that the decisions of courts in previous cases can do is to aid us in interpreting the intent of the Legislature in this particular case. Under the rules of interpretation stated again and again, a special statute made applicable to one

locality, or for a particular case, is not repealed by implication by a statute general in its terms and otherwise statewide in its application, unless the intention of the Legislature thereby to do away with the local or exceptional law is manifest, although the terms of the general act would, but for the special act, govern the particular condition or case provided for by the special act. (Matter of Commissioners of Central Park, 50 N. Y. 493; Lewis v. City of Syracuse, 13 App. Div. 587; Buffalo Cemetery Association v. City of Buffalo, 118 N. Y. 61.) ”

This opinion is at variance with the opinions of General Carmody in the construction to be placed upon section 20 of the public health law and must control in the decision of this application. (See also opinion of Attorney-General, report of 1915, page 291.)

It will be observed that in section 20 relating to the appointment of boards of health the statute only exempts cities of the first and second class from the operations of the act, while in that part of the same section relating to the method of appointment and term of office of a health officer it excepts “cities of the first and second class, and such other cities whose charters otherwise provide.” If the charters of *all* cities having special provisions of their own providing a different method from the general act, are to prevail over those of the general statute in the matter of the appointment of boards of health, then certainly the charters of cities “which otherwise provide” must also prevail over the general law in relation to the method of appointment and term of a health officer.

I do not believe the petitioner could succeed if an action was allowed, and it is the duty of the Attorney-General to protect and save an officer holding a valid title to an office from the expense and annoyance of defending his title just as much as it is to allow an action when the question is open to grave doubt, or when he is convinced that the incumbent has illegally usurped the duties of an office.

For the foregoing reasons, I recommend that the application of the petitioner be denied, and the right to commence an action in

the name of the people to test the title to the office of health officer in the city of Fulton be refused.

Dated April 3rd, 1918.

GEORGE A. FISHER,
Second Deputy Attorney-General.

Approved:

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of EDWARD B. WHALEY for the Commencement of an Action in the Nature of *quo warranto*, against GILBERT EASTWOOD to Oust and Exclude Him From the Office of Superintendent of Highways of the Town of Patterson, Putnam County, New York.

This is an application for the commencement of an action in the nature of *quo warranto* to test the title to the office of superintendent of highways of the town of Patterson in the County of Putnam.

APPEARANCES

The petitioner appeared by James Dempsey, his attorney.

The respondent appeared by John E. Mack, his attorney, and William T. Sheehy of counsel.

FACTS

At the election held in the town of Patterson, Putnam county, New York, on the 6th day of November, 1917, there was to be elected, among other officers, a superintendent of highways for such town, and the respondent, Gilbert Eastwood, was the regularly nominated candidate of the republican party, and Charles E. Akin, the regularly nominated candidate of the democratic party. The petitioner had been the superintendent of highways during the years 1916 and 1917 and endeavored to obtain a renomination upon the republican ticket for the same position, but failed to secure the nomination, and at the election had cards circulated upon which his name was correctly printed and asked the voters to write his name in the blank column for such office.

Upon the canvass of the ballots by the board of election, it was found that there were several ballots upon which the petitioner's name had been erroneously written, and the following is a copy of the statement made by the town board upon the canvass of the ballots, to wit:

“ PATTERSON, N. Y.,
March 2, 1918.

“ Copy of Statement of votes cast and counted for Superintendent of Highways at the Town Meeting held in and for the Town of Patterson, N. Y., on November 6th, 1917.

The whole number of votes counted for the office of Superintendent of Highways was Three Hundred and Sixty-two 362

of which Gilbert Eastwood received One Hundred, ten	110
Charles E. Akin received One Hundred, Eight...	108
E. B. Whaley received Sixteen	16
Edward Whaley received Twenty-two	22
Edward B. Whaley received Seventy-one	71
Ed Whaley received Five	5
E. Whaley received one	1
E. D. Whaley received one	1
E. B. Waley received one	1
Ed B. Whaley received Three	3
Edwin Whaley received one	1
E. W. Waley received one	1
Edward Waley received one	1
E. B. Whalley received one	1
David Scully received one	1
Blank Ballots Sixteen	16
Void Ballots Three	3

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“Copy of Statement Soldiers Votes cast and counted for the office of Superintendent of Highways for the Town of Patterson, N. Y., on November 6th, 1917.

The whole number of votes counted for the office of Superintendent of Highways was four	4
of which Edward B. Whalley received one	1
Edward B. Whalley received one	1
Gilbert Eastwood received Two	2
	4''

Upon the completion of the canvass by the town board, the respondent, Gilbert Eastwood, was declared elected and a certificate of election was issued to him, and he duly qualified for the office of superintendent of highways of said town, entered upon the discharge of his duties and is still acting in that capacity.

The petitioner thereafter instituted mandamus proceedings in the Supreme Court to compel the town board to reconvene and recanvass the ballots, alleging that all the ballots upon which the name of "Whaley" or "Waley" appeared should be counted for the petitioner, but the court denied the application upon the ground that he had no authority in such a proceeding to determine the intent of the voters or the title to the office.

REPORT

It is permissible under subdivision 2 of section 358 of the Election Law for a voter to write in the blank column the name of any person for whom he desires to vote, whose name is not on the ballot; and provision is made for the tallying and certifying of such votes; and at the completion of the canvass the chairman is required by section 375 to make public oral proclamation of the whole number of votes cast at such election at such polling place for all candidates for each office. Statements of the result are then made in triplicate by the board and delivered by the chairman to the respective officers entitled under the Election Law to have them. This all indicates that the duties of the various election boards are mainly ministerial, and the return or statement made in the election districts in the town of Patterson were made in accordance with the statute, and the inclusion therein of the several names as they appeared upon the ballots was the proper form for such return.

Under section 67 of the Town Law, the inspectors, where the town election is held at the same time as the general election, are required to make the statement of the whole number of votes cast for each candidate for a town office and to deliver the same to one of the justices of the peace of the town, and on the Thursday succeeding the election, the justices of the peace and the town clerk are required to convene and recanvass such votes from the statement of the inspectors and to enter the result which shall be read by the clerk, and is notice to all voters and candidates of the result of such election. It is thus shown that the board of town canvassers also act in a ministerial manner. They are not permitted to recount the votes but must declare the result as shown by the statements made by the inspectors.

Matter of Park, 37 Misc. 133.

Judge Young has rightfully ruled that the title to an office could not be tried in a mandamus proceeding, and his decision is controlling upon that subject.

It is not necessary, and I think neither party should be embarrassed by any expression of opinion by the Attorney-General as to whether any of the votes upon which any names or initials were written, other than "Edward B. Whaley," should or should not be counted for him. It is evident that if all the votes upon which the names of "Whaley" or "Waley" appear had been counted for the petitioner, he would have been entitled to receive the certificate of election to the office of Superintendent of Highways of the town, and it is policy of the courts to give effect to the intention of the voter if it is unaccompanied by any evidence indicating an intent on the part of the voter to mark it for identification. All of such ballots can be examined in an action in the nature of *quo warranto*, and counted if they represent the intent of the voter and the court decides in favor of their validity.

People v. Cook, 8 N. Y. 67.

People ex rel. Kathan v. County Board of Canvassers, 75 App. Div., 110.

People ex rel. Smith v. Pease, 27 N. Y. 45.

People ex rel. Calihan v. Hunt, 75 App. Div. 33.

In all of the above cases somewhat similar questions to that raised upon this application were involved, and in recent proceedings arising over the mayoralty of the city of Mount Vernon, the court held that certain ballots which had not been protested could not be counted, and that it was without power to order such ballots counted in mandamus proceedings. That ruling was affirmed by the Court of Appeals.

It is stated by the respondent that there was no protest or objections made to the canvass on election night and that, therefore, the petitioner is concluded by the count, but upon the contrary, it is stated in the verified petition that the action of the board was protested by the petitioner and his watchers "who demanded that the said difference of 54 votes as polled, counted and canvassed for said office, should be canvassed and counted for your petitioner." Whatever may be the fact as to protest, the ballots can be examined and passed upon by the courts and the jury in an action in the nature of *quo warranto*.

The question to be settled in this class of actions is, which candidate received the greater number of legal votes cast at such election.

People ex rel. Deister v. Wintermute, 194 N. Y. 99.

The petitioner has been denied the right in his mandamus proceeding to obtain a ruling upon the validity of the several votes which he claims were cast for him, except the 72 upon which his name was properly written, other than the decision of the town canvassing board, a ministerial body, and as there are sufficient of such votes upon which his name was irregularly written to change the result if allowed to him, I do not think that his petition is unreasonable. He asks the privilege of going before an impartial tribunal and have his claim passed upon by an unbiased court, and I think there is sufficient merit in his position to justify the allowance of such an action, and I do, therefore, recommend that an action be allowed upon the usual terms.

Dated, April 11, 1918.

GEORGE A. FISHER,

Approved: *Second Deputy Attorney-General.*

MERTON E. LEWIS,

Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Petition of the AUTOMATIC ELECTRIC COMPANY, a corporation existing under the laws of the State of Illinois, to the Attorney-General of the State of New York for the dissolution of THE AUTOMATIC ELECTRIC COMPANY, LIMITED.

On reading and filing the report of Alexander T. Selkirk, a Deputy Attorney-General, recommending the commencement of an action in the name of the people, to procure the dissolution of The Automatic Electric Company, Limited, a domestic corporation, and the petitioner having filed in this office a bond in the penal sum of two hundred and fifty dollars (\$250.00), and having also assented to the terms and conditions prescribed by me for the commencement of such action, I do hereby

Order and direct that leave be given to commence an action on behalf of the people for the dissolution of said The Automatic Electric Company, Limited, a domestic corporation, and that Messrs. Wollman & Wollman, of 20 Broad Street, New York, be and they hereby are designated and empowered to commence such action in my name as Attorney-General, and to prosecute the same to final determination, in compliance with the rules and regulations of my department.

Dated, Albany, N. Y., May 10, 1918.

MERTON E. LEWIS,

Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Petition of the AUTOMATIC ELECTRIC COMPANY, a corporation existing under the laws of the State of Illinois, to the Attorney-General of the State of New York for the dissolution of THE AUTOMATIC ELECTRIC COMPANY, LIMITED.

To the Attorney-General of the State of New York:

A petition verified by the Vice-President of the Automatic Electric Company, an Illinois corporation, shows that it desires to obtain a license from the State of New York permitting it to do

business within this State; that it has attempted to obtain such a license but has been unable to do so for the reasons that the records of the Secretary of State's office show that a New York corporation by the name of The Automatic Electric Company, Limited, had filed a certificate on December 2, 1886; that said domestic corporation did business for only a short time after its incorporation and has not done any business for more than twenty years last past. It also appears from said petition that only two of the persons originally interested in said domestic corporation are still alive.

A hearing was granted to the petitioner and Wednesday, April 17, 1918, fixed as the date of such hearing. Due notice thereof was given to said two remaining incorporators by mailing a notice of hearing to them on April 4th. Notice was also directed to The Automatic Electric Company, Limited, at Elmira, N. Y., its former principal place of business, but this last mentioned notice was returned marked "unclaimed." On the return day no one appeared in opposition to the petition.

I would, therefore, respectfully recommend that leave be given to commence an action in the name of the people for the dissolution of The Automatic Electric Company, Limited, the domestic corporation, and that Messrs. Wollman & Wollman, of 20 Broad Street, New York City, the attorneys for the petitioner, be designated to commence such action and to prosecute the same without fee or compensation from the State, in compliance with the usual rules and regulations in such cases.

Dated, Albany, N. Y., May 10, 1918.

Respectfully submitted,

ALEXANDER T. SELKIRK,

Deputy Attorney-General.

Approved, May 10, 1918.

MERTON E. LEWIS,

Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of ERNEST G. DRAPER for the commencement of an action to dissolve the AMERICAN CREOSOTING COMPANY, a domestic corporation.

On reading and filing the report of Alexander T. Selkirk, a Deputy Attorney-General, recommending that proceedings be instituted for the commencement of an action in the name of the people to procure the dissolution of the American Creosoting Company, a domestic corporation, and the petitioner having filed in this office a bond in the penal sum of five hundred dollars (\$500.00), and having also assented to the terms and conditions prescribed by me with respect to such action, I do hereby

Order and direct that William W. Niles, Esq., of 11 Wall Street, New York City, be and he is hereby designated and empowered to apply to the court in my name as Attorney-General for leave to commence an action in the name of the people for the dissolution of the American Creosoting Company, and if such leave be granted to prosecute the same to final determination in compliance with the rules and regulations of this department.

Dated, Albany, N. Y., May 10, 1918.

MERTON E. LEWIS,
Attorney-General.

In the Matter of the Application of ERNEST G. DRAPER for the commencement of an action to dissolve the AMERICAN CREOSOTING COMPANY, a domestic corporation.

To the Attorney-General of the State of New York:

The petition filed in the above matter shows that the petitioner, who is a resident of New York City, is the President of the American Creosoting Company, a New Jersey corporation, which has endeavored to procure a license to do business in this State but has been refused such license because of the fact that it appears from the records in the office of the Secretary of State that a company by the same name filed a certificate of incorporation on November 21, 1904. It is further alleged that the American Creosoting Company, the domestic corporation, has suspended its ordinary and lawful business for more than one year last past

and has never carried on or transacted any business within New York State; that one-half of its capital stock has never been paid in or a certificate to that effect filed; that it has never made any tax reports or paid any taxes, and that it has failed to organize and commence the transaction of its business or to undertake the discharge of its corporate duties within two years after the filing of its certificate, the only step taken being the filing of the certificate. It is further alleged that the New Jersey corporation in which the petitioner is interested will likely do a large business in this State and that it has in fact paid corporation taxes to the State for some years.

Affidavits submitted by the petitioner indicate that the parties interested in the domestic corporation cannot be located, if in fact there are any such; that the persons named in the certificate of incorporation cannot be found. The attorney whose name appeared on the certificate was interviewed and referred the person interviewing him to a third party, who stated that the domestic corporation never did any business and never had any plant.

In the above circumstances the petitioner asks that an action be commenced to dissolve the domestic corporation. As this is a case where on the face of the papers it appears that there has never been any business commenced so that there could not as a matter of fact be a "suspension" of business, leave of the court would have to be obtained before commencing an action under section 131 of the General Corporation Law. It is, however, recommended that permission be granted to the petitioner to institute the necessary proceedings under the usual rules and regulations in this department upon his giving a bond for costs.

Respectfully submitted,

ALEXANDER T. SELKIRK,

Deputy Attorney-General.

Approved, May 10, 1918.

MERTON E. LEWIS,

Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of JOHN S. DOWLING for the commencement of an action to test the title of JOHN J. SHEA to the office of Trustee of Third Ward in the Village of Hoosick Falls.

Application by John S. Dowling for the commencement of an action in the nature of *quo warranto* to oust and exclude John J. Shea from the office of trustee of the Third ward of the village of Hoosick Falls.

APPEARANCES

Thomas F. Powers, attorney for petitioner.

John T. Norton, attorney for respondent.

FACTS

At the village election held in Hoosick Falls on the 19th day of March, 1918, the petitioner, John S. Dowling, and the respondent, John J. Shea, were opposing candidates for the office of trustee in the Third ward in such village.

Upon the canvass of the votes cast in said ward it appeared that the said Shea received a majority of sixty over the said Dowling.

The said Shea was duly certified as having been elected to said office and did thereafter duly qualify for such position and is still acting.

At the time of such election the said Shea was a resident of and the owner of a lot of land abutting on Main street in said village located within the bounds of what is known as the Third ward in said village, and had been the owner of such property since the twenty-first day of February, 1918. He was also the owner of a stock of merchandise and fixtures and carried on his business on Church street, which was also located within the bounds of the Third ward. It was also claimed that he owned some bank stock upon which taxes had been paid, but no proof was given of this latter fact.

Neither the value of the real or personal property owned by the said Shea at the time of the election was given upon the hearing.

The said Shea had not been assessed upon the preceding assessment roll of the village of Hoosick Falls for either real or personal property.

REPORT AND CONCLUSION

The sole question to be considered upon this application is the eligibility of Mr. Shea. He was elected by a large majority, for a village ward election, and unless he is clearly ineligible he should not be annoyed or put to the expense of defending his title to the office to which the people have chosen him by the decisive majority of sixty.

The village of Hoosick Falls is incorporated under a special act and the last general revision thereof was made by chapter 549 of the laws of 1884, and it is provided in title XII thereof that two trustees shall be elected in each ward of said village, "each of whom shall be an elector of the ward for which he is elected, and own property liable to taxation therein."

It is a well settled principle that where a village or city is incorporated by special act, the provisions of the special charter will prevail over those of a general act if there is a difference in the provisions of the special and general acts, and this report will proceed upon the theory that the charter of the village of Hoosick Falls will control as to the eligibility of its trustees.

It will be noted that the act does not specify what kind of property must be owned by a person to make him eligible to the office of trustee; also that it is not required that it should have ever been assessed upon any preceding assessment roll "but simply that he shall own at the time of election "property liable to taxation."

It was held by the attorney-general in 1907 (report of 1907, page 555) that a person assessed only for personal property was eligible to hold the office of trustee under the General Village Law, which provides that he (a trustee) "must be the owner of property assessed to him on the last preceding assessment roll and must also be the owner during the term of his office of property assessed to him on the assessment roll, as the section does not appear to make any distinction between personal property and real estate.

It is provided by section 38 of the General Construction Law that "the term property includes real and personal property."

I am very clearly of the opinion that the ownership of either real or personal property liable to taxation by an elector residing within the ward in which he is a candidate would render such person eligible to hold the office of trustee within the village of Hoosick Falls.

It was proved that Mr. Shea was the owner of a lot of land within the ward in which he resided, at the time of his election, and had been such owner since the twenty-first of February, 1918, and it follows that such lot was liable to taxation therein if it was of any value whatever. And it is also shown that he was the owner of a stock of merchandise within the ward, which was also liable to taxation. Such ownership by Mr. Shea of real and personal property liable to taxation within the ward in which he resided and in which the property was located rendered him eligible to the position, despite the fact that he was not assessed for either real or personal property upon the last preceding assessment roll of the village.

As far as the ownership of the real property is concerned, it appears that Mr. Shea took title thereto in February, 1918, and he could not therefore have been assessed therefor in 1917, but his title became complete upon the delivery of the deed, and his failure to have it recorded does not vitiate or render his title void. He was the owner of such property at the time of his election and it was and is liable to taxation within the ward and he was not ineligible by reason of his omission to have the conveyance recorded at the time of the election.

Neither does the fact that Mr. Shea was not assessed upon the last preceding assessment roll for his personal property render him ineligible. He lived there in the district and was running his business in the same locality and even if the Hoosick Falls charter had required him to be the owner of property assessed upon the last preceding assessment roll (which it does not) he should not be deprived of the office or rendered ineligible through an error or omission of the assessors to place him upon the assessment roll, under the rule adopted by General Carmody upon two applica-

tions to bring actions to oust and exclude trustees who had been elected under the General Village Law, and were the owners of property liable to assessment upon the last preceding assessment roll, but whose name had been omitted therefrom through the action of the assessors. (Report of attorney-general, 1914, p. 116). The position taken by General Carmody was upheld and approved by Judge Wheeler in *Jewell vs. Mohr*, 136 N. Y., Supp., p. 273, but my conclusion in this case is not based upon the last above mentioned authorities, for there is no requirement in the charter of the village of Hoosick Falls that a person must have been assessed upon the last preceding assessment roll of the village.

The parties upon this application have rested their case upon the allegations contained in the petition and the answering affidavits and a stipulation made by the respondent's attorney that the deed held by Mr. Shea was not on record in Rensselaer county, and that no property, real or personal, had been assessed against him on the preceding assessment roll of the village of Hoosick Falls. The fact of the execution and delivery of the deed and the ownership of real and personal property were and are fully set forth in the answering affidavits and have not been denied or disproved and are sufficient to establish such facts to my satisfaction upon this application.

I am satisfied that the petitioner could not sustain an action if one was allowed to be commenced, and I do therefore recommend that the application be denied.

Dated May 20, 1918.

GEORGE A. FISHER,

Approved May 20, 1918. *Second Deputy Attorney-General.*

MERTON E. LEWIS,

Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of CLARK O. FULLER and others for the commencement of an action in the nature of *quo warranto* to oust and exclude JAMES W. TOMPKINS from the office of chief of police of the village of Ossining.

This is an application for the commencement of an action in the nature of *quo warranto* to oust and exclude from the office in

chief of Police of the village of Ossining, one James W. Tompkins who is claiming the right to hold such office and is discharging the duties of such position.

APPEARANCES

Humphrey J. Lynch, Attorney for Petitioners.

Edgar I. Ryder, Attorney for Respondent.

Benjamin Fagan, Corporation Counsel.

FACTS

Prior to the enactment of chapter 242 of the laws of 1906 the village of Ossining was incorporated under special act as the village of Sing Sing, and the last general revision of the charter of the village of Sing Sing was made by chapter 85 of the laws of 1896, and by section 90 of such act it was provided that the board of trustees of said village should appoint "not more than three policemen in and for said village."

The office of chief of police was not created or provided for in and by such act.

On May 1, 1900, James W. Tompkins was appointed a policeman for said village; and on the 5th day of June, 1900, the board of trustees designated the said James W. Tompkins as the chief of police of said village.

The board of trustees of such village continued, annually thereafter, to reappoint the said James W. Tompkins to the same position and he was designated as chief of police.

By chapter 183 of the laws of 1901, the name of the village was changed to Ossining, and chapter 83 of the laws of 1896 was amended by providing that the name Ossining should be inserted therein in the place of Sing Sing, wherever the name of Sing Sing appeared and the closing sentence of section 2 of chapter 183, laws of 1901, reads:

"The change hereby made in the name of such village shall not alter or affect in any way the corporate powers and privileges possessed by such village."

The charter of the village of Ossining was revised by chapter 242 of the laws of 1906, and section 131 thereof reads as follows:

“Section 131. Police force; how appointed.—The police force of the village of Ossining shall consist of a chief of police and such patrolmen as the trustees may deem necessary not exceeding six, who, after appointment, qualification and entrance upon the duties of their office, shall not be removed therefrom except for cause shown, based upon charges preferred in writing and after a hearing. No person, under the age of twenty-five years nor over the age of forty-five, shall be eligible to appointment on the police force, nor shall any person serve as a policeman after reaching the age of sixty years, but on reaching such age his office shall be deemed and become vacant. Whenever a vacancy shall occur in the police force, such vacancy shall be filled by the appointment of the board of trustees after a competitive examination, both physical and mental, under terms and conditions which shall be prescribed by the board of trustees.”

This section superseded section 59, chapter 83 of the laws of 1896 in reference to the appointment of a police force for such village and no chief of police for such village was ever provided for until the enactment of chapter 242 of the laws of 1906.

At the time of the appointment of the said James W. Tompkins to the office of a policeman in said village on May 1, 1900, he was an exempt volunteer fireman having served the term required by law in a volunteer fire department in the village of Hastings-on-Hudson, and has been the holder of a certificate of such service from the proper officers of such last mentioned village from the 26th day of March, 1884, to the present time.

The said James W. Tompkins is now over sixty years of age and was upwards of forty-five years of age on April 16, 1906, and has at all times since the enactment of chapter 242 of the laws of 1906, been over forty-five years of age. No charge of misconduct or incompetency has ever been made against him.

REPORT

The office of chief of police of the village of Ossining was first created by chapter 242 of the laws of 1906. The board of trustees of the village of Sing Sing and the board of trustees of the village of Ossining were without authority to create such an office, and the appointment of Mr. Tompkins to such position was a mere nullity, prior to the time when the amended charter took effect on April 16, 1906. The designation of him by the boards as "Chief of Police" did not clothe him with any greater power or authority than he had as a policeman of the village, and if he used the title "Chief of Police" and if he functioned as chief of police it did not establish that office in the village. The office of chief of police of that village first came into existence upon the enactment of chapter 242 of the Laws of 1906, and at that time Mr. Tompkins was then over forty-five years of age and therefore ineligible to the appointment of chief under the statute. He was then a policeman and could continue to hold such office until he was sixty years of age unless he should be removed from cause based upon charges preferred in writing and after a hearing, but the board could not legally appoint him to the new office of chief after he was forty-five years of age. He was a member of the police force of the village but that did not give the board authority to appoint him to a new office in the police department after he had passed the age limitation set for that office by the statute.

Assuming, but not conceding, that the board could appoint him as chief on account of his position as policeman, he could not legally hold the office after he became sixty years of age (unless he is entitled to hold it by virtue of the Civil Service Law) for the statute specifically provides that he shall not serve as a policeman after reaching that age and the "office shall be deemed and become vacant."

It is argued in behalf of Mr. Tompkins, and the corporation counsel has advised that inasmuch as Mr. Tompkins was an exempt fireman when the charter was revised in 1906, that he was protected by section 22 of the Civil Service Law, and that, irrespective of his age, he is entitled to hold the office of chief until he becomes physically disqualified or removed after notice

upon stated charges. If the office of chief of police had been established by the charter of 1896 and if he had been the appointee to that position at the time the act of 1906 took effect and continued in such position under the new charter, it is possible that under the saving provisions contained in section 166 he would be protected thereby, notwithstanding the age limitation contained in section 131 thereof, but it must be borne in mind that at the time the office of chief of police was created for the village of Ossining, he did not hold such position, and the act which created the office also provided that the incumbent should not hold it after he was sixty years of age, and if he accepted the office with such a condition attached he was and is bound by it.

It is a well-settled rule in the construction of a statute that all of its provisions must be given effect, if possible, and unless there is some irreconcilable repugnancy each portion of a statute must be given full force.

People ex rel. Gilmour v. Hyde, 89 N. Y. 11.

People ex rel. Mason v. McClane, 99 N. Y. 83.

People ex rel. Freligh v. Matsell, 94 N. Y. 179.

There is no repugnancy in the statute creating the office of chief of police of the village of Ossining and providing that the incumbent should not hold the same after he reached the age of sixty years. He could not accept the benefit of the statute and repudiate that portion which is objectionable to him.

The Civil Service Law is a general statute and the charter of the village of Ossining is a special act applying to that village alone. The charter creating the office of chief of police and providing that he should not hold after attaining the age of sixty years was passed long after the general act. It is well settled that where there is inconsistency between the provisions of a general act and those of a special statute the special act will prevail in all matters to which it was intended to apply, and I think it is very clear that the provisions of the Civil Service Law so far as it would tend to protect an exempt fireman in holding the office of policeman in the village of Ossining after he becomes sixty years of age was repealed by implication by the enactment of the charter of 1906. I am well aware of the rule that repeals by implication are not favored by the courts, but where there is

such a clear, manifest purpose on the part of the Legislature to limit the tenure of office of the members of the police force, whether they be old soldiers or firemen, that there can be no doubt as to the repeal.

There is no vested right in a public office beyond the right to exercise its duties and functions for the time being and receive the emoluments thereof, which cannot be taken away by the Legislature at any time.

In *Smith v. The Mayor, etc.*, 37 N. Y., 518, Judge Hunt, at page 520 used this language:

"An office is simply an appointment or authority on behalf of the government to perform certain duties, usually at and for a certain compensation. Both the office itself and the compensation, upon general principles of law, are entirely within the control of the government, to diminish, increase or abolish. So it may at any moment be given up by the incumbent. There can be neither property or contract in such a subject."

See also *Lang v. Mayor*, 81 N. Y., 427 and *In re Tiffany*, 179 N. Y. 455.

There is not any doubt about the right and authority of the Legislature to impose such limitations upon the office of the chief of police as it deemed proper, and the fact that Mr. Tompkins, had, previous to the passage of chapter 242 of the Laws of 1906, been a policeman and functioned as chief of police under the old statute, does not entitle him to protection as chief of police under the revised charter after the term provided therein has expired. His former appointment does not aid him in the retention of the office of chief under the new statute in which the tenure is limited to the period in which he is under the age of sixty years. It was a definite period just as much as if he had been appointed for a term of one year or ten years.

The purpose of the Civil Service Law is to protect veterans and exempt firemen, with no fixed terms, from removal without cause and only after an opportunity is given them to be heard..

In *re Tiffany*, 179 N. Y., 455, *supra*, and numerous other cases.

The case cited by the corporation counsel, *Matter of Murray*,

88 Misc., 625, is not analogous to the case at bar. In that case the applicant had held the position of chief electrical engineer before the charter of the city of Lockport was passed, and the court held that he was protected in the appointment by the saving clause of the charter, and could not be removed without charges and a hearing, but in this case Mr. Tompkins did not hold the office of chief of police in the village of Ossining when the revised charter took effect, and no definite time was fixed by the charter in the Lockport case for the expiration of the appointment.

This question was submitted to the Attorney-General in a communication from one Frank W. Stella on December 6, 1916, and December 2 Mr. Ivins answered very fully and the closing paragraph of his letter reads as follows:

"On the facts as stated in your communication it is my opinion that the office of chief of police in the village of Ossining is vacant."

I fully agree with the conclusion reached by Mr. Ivins that the office is vacant and a new appointment can be made by the board of trustees at any time, and if Mr. Tompkins persists in holding and intruding into the position he is unlawfully usurping the office and an action will lie to oust and remove him therefrom under the provisions of section 1948 of the Code of Civil Procedure, and I do therefore recommend that an action be commenced in behalf of the people against him unless within five days after the mailing of a copy of this report and approval to his attorney and the corporation counsel the said Tompkins shall surrender all right and claim to such office, and shall deliver to the board of trustees all books, papers, shields and property appertaining to the office of chief of police of the village of Ossining.

Dated at Albany, N. Y., this 26th day of June, 1918.

GEORGE A. FISHER,
Second Deputy Attorney-General.

Approved:

July 1, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL.

In the Matter of the Application of JOHN M. PUGH and H. BELA CARY for the commencement of an action against PETER E. HOFFMAN to determine the right of the petitioners to hold the office of trustees of the village of Whitesboro.

This is an application on the part of the above named petitioners for the commencement of an action in the nature of *quo warranto* to oust and exclude the respondent from the office of trustees of the village of Whitesboro, Oneida county, New York, and to determine the rights of the said petitioners to hold office of trustees of said village.

Southworth & Scanlan, attorneys for petitioners.

Sisson, Bray & Hanagan, attorneys for respondent.

FACTS

The village of Whitesboro, Oneida county, was incorporated under a special act of the legislature as revised by chapter 539 of the Laws of 1884.

Thereafter there was annually elected upon the first Tuesday of April in each year (that being the date fixed by said statute) a president of such village for a term of one year and three trustees for terms of two years, and the three trustees so elected together with the three elected the year previous and the president constituted the board of trustees of said village.

At the annual election held on the 2nd day of April, 1918, successors were to be elected to succeed George W. Eberley, Peter E. Hoffman (respondent) and William H. Lamphere, whose terms of office by virtue of said act expired on the first Tuesday after the annual election, to wit: on April 9, 1918.

That at said annual election held on the 2nd day of April, 1918, there were six candidates for the office of trustee, to wit: the above named Eberley, Hoffman and Lamphere were all candidates for re-election and Joseph H. Soper and the petitioners John M. Pugh and H. Bela Cary were also candidates for the same positions.

Upon the canvass of the votes cast at such election the following named persons received the highest number of votes cast for trustees, to wit: George W. Eberley, John M. Pugh, H. Bela Cary.

A certificate of election was duly made by the election officials certifying that the three last above named persons had received the highest number of votes for such office at the election held on April 2, 1918, and were duly elected trustees of said village for the ensuing two years.

At a meeting of the board of trustees of said village on the 8th day of March, 1918, a resolution was duly passed to submit the question, whether the village should reincorporate under the General Village Law, to the electors of said village at the annual village election to be held on the 2nd day of April, 1918.

That pursuant to such resolution notices were posted in eight public places in said village on the 13th day of March, 1918, stating among other things, that a proposition would be voted upon at said annual election as follows: "Shall the village of Whitesboro be re-incorporated under the general Village Law?"

There is no newspaper published in said village.

At said election on the 2nd day of April, 1918, ballots were furnished the electors upon which a proposition, numbered two, was submitted, whether the village should re-incorporate under the General Village Law, and the same was carried by a vote of 590 for and 229 against such proposition.

That on the 5th day of April, 1918, a certificate of the result of the vote upon such proposition was filed in the office of the village clerk, and on the 8th day of April, 1918, copies of such certificate were duly filed in the offices of the county clerk of the county of Oneida and Secretary of State.

That immediately after the result of the election was announced the petitioners took the oath of office and duly qualified for the office of trustee of said village.

At the first meeting of the board after the election on the 9th day of April, 1918, all six of the trustees who had been candidates were present, but no action was taken towards the organization of the board.

The next meeting was held on the 16th day of April, 1918, and the petitioners were again present and demanded to be recognized

trustees. The said Eberley, Lamphere and Hoffman were also present and participated in the meeting and were appointed upon various committees, and the board refused to recognize either of the petitioners, and they were informed by the president of the village that the village was reincorporated and acting under the General village Law and that the old trustees held office until the next election, under the provisions of section 303 of the General Village Law.

That thereafter at a meeting of the board of trustees, held April 30, 1918, the said William H. Lamphere resigned as trustee and his resignation was duly accepted by the board, but the said respondent Peter E. Hoffman continues to act and claims the right to exercise the duties and discharge the functions of such office.

At the village election held on the said 2d day of April, 1918, all persons who were qualified to vote for candidates at said village election and desired to vote thereat were allowed to vote upon the proposition to reincorporate the village under the General Village Law, whether they were taxpayers or not.

No question is raised upon this proceeding as to the eligibility of John M. Pugh to hold the office of trustee, but it is claimed by the respondent that H. Bela Cary is not eligible to hold such office. Mr. Cary is a joint owner with his wife of a piece of real property within the corporate limits of said village, and has been such joint owner since March 16, 1910, the deed of which was recorded in Oneida county clerk's office on April 2, 1910, in Book of Deeds 654 at page 478, and said Cary has paid the taxes thereon in each year since the purchase of said premises by himself and wife, but the property has never been assessed against him.

REPORT

The petitioners each claim the right to hold the office of trustee of said village by virtue of their election by a greater number of votes than were cast for the said William H. Lamphere and Peter E. Hoffman, and they are certainly entitled to hold such offices unless there are some insurmountable obstacles against their doing so. Mr. Lamphere has surrendered all claims to the office by his resignation, but Mr. Hoffman is still claiming the right to

hold the office and is performing the duties of a trustee with the consent and acquiescence of the remaining members of the board. The main controversy arises out of the fact that a proposition was submitted at the annual election to reincorporate the village under the General Village Law, which proposition was carried by a decisive majority, but it is claimed by the petitioners that the attempted reincorporation was not conducted in conformity to the statute and was therefore invalid and ineffectual as a reincorporation. Several objections are urged by the petitioners against the validity of the reincorporation.

It was provided in section 303 of the General Village Law that "The officers of the village in office when the incorporation takes effect shall continue to hold their offices until noon on the Monday following the date when the next annual election in such village may be held under this chapter, at which time their terms shall expire." It is claimed by the board that despite the fact that Messrs. Pugh and Cary were elected at the time when the old charter was still in force, Messrs. Lamphere and Hoffman are entitled to continue in office until after the annual election in 1919, by force of the above provision. Mr. Lamphere has waived all right and claim to the office by tendering his resignation, which has been accepted.

The procedure to be followed upon the reincorporation of a village is all contained in article 13 of the General Village Law and provides that such a proposition may be submitted at either an annual or special village election, and the last sentence of section 301 reads as follows:

"Such a special election shall be held by the same officers and conducted and the result canvassed in the same manner as provided by law for an annual election in such village."

The old charter of the village of Whitesboro is silent as to the qualification of voters upon a proposition to reincorporate, but by section 2 of chapter 539 of the Laws of 1884, which was in force at the time of the annual election, it is provided as follows:

"§ 2. There shall be elected hereafter by ballot within and for said Village, *by the electors residing therein*, the

following officers, to exercise the franchises of the corporation: A president, six trustees, a clerk, a treasurer, a collector and a police justice, who shall be inhabitants and electors of said Village, and the president and trustees *shall be owners of property liable to be assessed for the expenditures of the Village.*"

It was held in the *Matter of Sag Harbor*, 32 Misc. 624, that all persons having a right to vote under the special act, would have the right to vote upon a proposition to reincorporate, and as article 13 of the General Village Law fails to specify who can vote upon a proposition to reincorporate it would appear that all the electors of such village had the right to vote upon the proposition. It did not involve an expenditure of money but simply related to the governmental affairs of the village and in the light of the holding of the Court of Appeals in *Spitzer v. Village of Fulton*, 172 N. Y. 285, I do not think the statute was violated by allowing all the electors of the village to vote upon the proposition submitted. There are, however, two or three other questions raised by the petitioners which I think they are entitled to have passed upon by a court before they should be deprived of the offices and privileges which a majority of the electors of said village have given them.

The posting of the notices, on the 13th of March for the election on the 2nd day of April is claimed to be insufficient under the statute which required a posting at least twenty days before the election, but I think by the usual method of computing time before the event that the requirement of the statute was complied with, counting the 13th as one day the notices were posted twenty days before the election.

The ballots used for the proposition did not conform to the provisions of section 300 of the General Village Law.

The certificate of the election officials showing the number of votes cast upon the proposition of reincorporation was not filed with the Village Clerk within twenty-four hours after the closing of the polls, as required by section 302 of the Village Law. It was not filed until the 5th day of April, nearly three days after the election.

I think the petitioners are entitled to have all these questions passed upon by a court and as there are questions of assessment, taxation and other rights involved in the organization of the Board of Trustees of Whitesboro which should not be left in doubt, the only satisfactory way to settle the question is by an action.

It is alleged on the part of the respondent that Mr. Cary is not eligible to hold the office of trustee, but I cannot agree with this contention. Under the old charter a trustee was required to be the owner of property liable to be assessed for the expenditures of the village. The statute does not say that he shall be the sole owner and it was shown that Mr. Cary is a joint owner of certain property with his wife and that he has paid the taxes thereon since 1910. This was sufficient ownership to render him eligible under the old charter. Section 42 of the General Village Law provides that a trustee must be the owner of property assessed to him upon the last preceding assessment-roll of the village and the owner during the term of property assessed to him on the assessment-roll. It has been held that the omission or oversight of a former board to assess property to the proper owner would not deprive the owner of eligibility to the office of trustee.

Jewell v. Mohr, 136 N. Y. Supp. 273.

Carmody, Attorney-General Report 1911, p. 226.

Carmody, Attorney-General Report 1914, p. 116.

It was also held by the present administration on the 20th day of May, 1918, in re application of John S. Dowling to test the title of John J. Shea to the office of trustee of Hoosick Falls (not yet reported) that a person "should not be deprived of the office or rendered ineligible through an error or omission of the assessors to place him upon the assessment-roll" where it appeared that the candidate owned property and should have been assessed therefor. Mr. Cary was a joint owner of property and has paid the taxes thereon for several years, but his name was not on the assessment-roll. He cannot be blamed for the omission. He was possessed of the essential qualifications for the office, i. e., ownership and a taxpayer, but he had no control over

the assessment-roll, and it was not his fault that he was not assessed, and I think he was eligible under the old charter of Whitesboro as well as under the present General Village Law.

I therefore recommend that an action be allowed upon the usual terms, in the name of the people upon the relation of both John M. Pugh and H. Bela Cary, against Peter Hoffman, to oust and exclude him from the office of trustee of the village of Whitesboro.

Dated, July 1, 1918.

GEORGE A. FISHER,
Second Deputy.

Approved:

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of JOHN M. PUGH AND H. BELA CARY for the commencement of an action against PETER E. HOFFMAN to determine the right of the petitioners to hold the office of Trustee of the Village of Whitesboro.

On reading and filing the report of George A. Fisher, second deputy, dated the 1st day of July, 1918, and which has been duly approved by me, I do hereby order and direct that an action be commenced in the name of the People on the relation of John M. Pugh and H. Bela Cary against Peter E. Hoffman to oust and exclude him from the office of trustee of the village of Whitesboro in the county of Oneida, and I do hereby designate Southworth & Scanlan of Utica, N. Y. to bring such action in my name as Attorney-General, without compensation from the State, upon the filing in this department of a bond in the penal sum of two hundred and fifty dollars (\$250) to be executed as required by my rules in such cases, and the stipulation appended thereto.

Dated, July 9, 1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL OF THE STATE OF NEW YORK

In the matter of the Application of CHARLES L. SANKEY, DOUGLASS POTTER, J. EDWARD BLACKMORE, GERALD B. GOULD and MAX CANTOR as Stockholders of COMMONWEALTH FINANCE CORPORATION, and as a Committee of the Stockholders Protective Association of COMMONWEALTH FINANCE CORPORATION, made for themselves as such Stockholders and such committee and for all other Stockholders similarly situated, to the Attorney-General of the State of New York, to commence an action in the name of THE PEOPLE OF THE STATE OF NEW YORK against HENRY D. TUDOR, HARRY L. BURRAGE, CHARLES C. DICKSON, ORMSBY MCHARG and CHARLES W. THOMAS, for a judgment removing them and each of them as Officers and Directors of said COMMONWEALTH FINANCE CORPORATION, and to make them account to said Corporation for moneys of said Corporation wasted and misappropriated by them, etc.

DECISION

The petition in this proceeding, brought under the provisions of sections 90, 91 and 304 of the general corporation law, asks for the commencement of an action in the name of the People for the removal of Henry D. Tudor, Harry L. Burrage, Charles G. Dickson, Ormsby McHarg and Charles W. Thomas, the directors of Commonwealth Finance Corporation.

It is conceded that this corporation was incorporated under the laws of the State of South Dakota; that it has been duly licensed to do business in this State, and is now doing business in the city of New York.

It is also conceded that such corporation has authority to issue its capital stock to the amount of \$10,000,000 of preferred and \$7,500,000 of common stock.

This corporation is engaged in the business "of financing automobile dealers so as to enable them to sell cars on the partial payment plan." The process seems to be to purchase promissory notes from such dealers, taken by them as partial payment of the purchase price of automobiles.

The respondents admit that the preferred stock of the company has been sold in New York State and in a number of other States. The petition alleges "that there are over seven thousand stockholders of said corporation all over the United States; that "in addition to these there are about ten thousand subscribers to stock who have not yet completed their installment payments for their stock," and that many hundreds of such stockholders and subscribers reside in this State. The respondents do not deny this allegation but plead lack of knowledge.

It is admitted that the respondents are directors and that all but Mr. Burrage are officers of the corporation, and that Henry D. Tudor and Ormsby McHarg are two of the three members of the executive committee of the corporation; that all of its common stock had been issued and that fifty thousand shares thereof had been returned to the treasury of the company and a part thereof had been issued to purchasers of the preferred stock of the company as bonus stock.

It is also admitted that by the by-laws of the corporation salaries and fees paid to officers shall not at any time exceed one per centum of the actual paid-in cash capital until such time as dividends upon both common and preferred stock shall be paid at the rate of seven per centum per annum. It is also admitted that no dividends upon the common stock have been paid.

It is argued in the brief for the respondents that this is a stockholders quarrel, of no public interest, and that the Attorney-General should not interfere. I confess that I am not able to view the matter in this light. The company is empowered and licensed to do business in this State. By its acceptance of such license, it subjected itself to the jurisdiction of the courts of the State and became bound to conform to the laws of the State.

In the twenty-second paragraph of the petition it is charged that the respondents fraudulently and unlawfully violated the by-laws of the corporation and their duties as officers and directors thereof.

By subdivision A of the 22nd paragraph it is charged that the respondent Tutor unlawfully appropriated to himself during the year 1917 moneys aggregating \$737.55 belonging to the corpora-

tion. Subdivision B of said paragraph charges that Ormsby McHarg appropriated to himself during the year 1917 moneys aggregating \$600.00 belonging to the corporation.

Subdivision C charges that the sum of \$3,063.93 of the funds of the corporation was unlawfully appropriated between December 1st, 1916 and April 3rd, 1918, and was charged upon the books as directors' fees and expenses.

Subdivision D charges that Henry D. Tudor between March 31, 1917 and April 21 1918, unlawfully appropriated to himself the sum of \$28,116.98 of the company's moneys, which he caused to be charged upon the books as salary to him as president of the corporation. Subdivision E charges that Henry D. Tudor between August 1, 1917 and December 18, 1917, unlawfully and fraudulently appropriated the sum of \$3,116.98 of the funds of the corporation and used such moneys in the payment of his personal obligations, including club dues and bills, personal insurance, etc., etc., and that he fraudulently caused said amount of \$3,116.98 to be credited to him on the books of the company as salary.

In various other paragraphs of the petition it is charged that the amounts paid to the officers of the corporation exceed the amounts which they were authorized to receive under the by-laws of the company. Whether this be so or not, I am unable to determine from the evidence. The Deputy Attorney-General who presided at the hearing was powerless to compel the production of the company's books and records. It was within the power of the respondents to produce the minute book of the corporation as well as its books of account. They did not do so.

I am unable to understand how men of character — business men, dealing with large affairs — can justify their refusal not only to produce the company's books but, what to me seems even worse, their refusal to defend themselves before the Deputy who presided at the hearing. They are charged in the petition with the misappropriation of the moneys of the company of which they were and still are officers and directors. It is true that in their answer to the petition they deny the charges. That it seems to me does not satisfy the requirements of the situation. They should have demanded an opportunity to testify under oath, and should

have subjected themselves to cross-examination. They did not do so, and they would not produce the company's books. They were warned of the probable consequences of such refusal, and of course must accept such consequences.

The witness Dugan was an assistant auditor of the company. From his testimony it appears that he had charge of its general ledgers, and that during the period beginning June 28 and ending December 5, 1917, there was paid to Mr. Tudor, the president of the company, \$17,500 as salary; that the total payments to him as salary from June 28, 1917, to April 1, 1918, amounted to \$28,116.98. Deducting from this amount the sum of \$3,116.98 leaves a balance of \$25,000.00, which represents a salary of \$35,000 per annum.

This evidence is undisputed. It seems to me that when these facts were shown it became incumbent upon Mr. Tudor to offer in evidence any resolution appearing upon the minute book of the company fixing and establishing his salary at \$30,000 per annum. In other words, Mr. Tudor is shown to have received from the treasury of the company a salary of \$2,500 per month. The record discloses no authority for the payment to him of any salary whatever. It was incumbent upon him to show as a matter of defense that such moneys were paid to him lawfully and in accordance with a resolution of the board of directors, duly adopted and entered upon the records of the company. His failure to do so would justify a conclusion that no such resolution was ever adopted. If no resolution was adopted fixing his salary, payments made to him as salary were unauthorized and unlawful. This is precisely what is charged in subdivision D of the 22d paragraph of the petition.

I feel that I must sustain this charge.

Other officers are charged with having fraudulently and unlawfully received the moneys of the company and the evidence offered in support of such charges is not controverted upon the record of the hearing. I think that it was the duty of the men charged with the receipt of such moneys to show by the records of the corporation by what right they were received.

Because of their failure to do so, it is my duty, as I see the situation, to grant this application.

I find it difficult to determine as a fact whether "the total amount expended for salaries of officers and fees of directors" actually exceeded at any time "one per centum of the actual paid-in capital of this corporation." The respondents might have cleared this matter from doubt by producing their books and by testifying under oath at the hearing.

It seems unnecessary for me to discuss the payment to Mr. McHarg of the sum of \$3,500 in 1918, withdrawn and charged to salary account for 1917, or the testimony of Mr. Dugan that Mr. Tudor as president was not supposed to draw \$2,500 per month as salary, or Dugan's testimony that he was told to generalize half of that money as office expense as general manager. Neither does it seem necessary to characterize petitioners' Exhibit E, from which it appears that Mr. Fusfield was given a written order signed by Mr. Tudor to charge moneys paid to him (Tudor) or to any other officer as "general expense and not under the heading salaries of officers."

In the trial of the action, which I regard it as my duty to institute, the books of the company will of necessity be produced. At that time these matters will be cleared up and the trial court will be able to pass upon all of the allegations of the petition more intelligently than I can do in this proceeding.

The charges of the petition that the moneys of the company have been unlawfully and fraudulently withdrawn from the treasury and appropriated by its officers and directors seems to me not only to warrant but to require me to institute an action for the removal of the directors in the interest of the public.

Such an action will be commenced without delay.

MERTON E. LEWIS,

Attorney-General.

Albany, N. Y., October 3, 1918.

BEFORE THE ATTORNEY-GENERAL OF THE STATE OF NEW YORK.

In the Matter of the Application of CHARLES L. SANKEY, et al., to the Attorney-General of the State of New York, to commence an action for the removal of HENRY D. TUDOR, HARRY L. BURRAGE, CHARLES C. DICKSON, ORMSBY McHARG and CHARLES W. THOMAS, as Officers and Directors of Commonwealth Finance Corporation, and for an accounting to said corporation for moneys of said corporation, etc.

The above entitled application having been duly heard and all the proceedings having been given personal consideration by me, and believing that an action can be maintained and that the public interests require the commencement of an action as asked for by the moving papers herein, I do

Order and direct, That an action be commenced in the name of the People against the said Henry D. Tudor, Harry L. Burrage, Charles L. Dickson, Ormsby McHarg and Charles W. Thomas, as officers and directors of the Commonwealth Finance Corporation, for their removal, and to compel an accounting to said corporation for the moneys thereof, and that Morris, Plante & Saxe, of 27 Pine street, New York city, are hereby designated to commence and prosecute such action in my name as Attorney-General of the State of New York, but without any compensation from the State of New York for such services.

MERTON E. LEWIS,
Attorney-General.

Dated, Albany, N. Y., October 3, 1918.

BEFORE THE ATTORNEY-GENERAL.

In the Matter of the Application of BURNS BROTHERS ICE CORPORATION that an action be maintained against the NEW YORK CENTRAL RAILROAD COMPANY to vacate or annul in part certain letters-patent issued on December 26, 1873.

J. Rider Cady for petitioner.

Visscher, Whalen & Austin (Robt. E. Whalen, of counsel), opposed.

Letters-patent were duly issued by the Commissioners of the Land Office on December 26, 1873, to the New York Central and Hudson River Railroad Company for a strip of land under water extending from New York city to Troy on the east side of the Hudson river, including a strip of land in front of the uplands, formerly of Robert F. Johnson, extending eighty (80) feet in width westerly from the center line of the railroad company's right of way to the west exterior line of the water grant. This grant was made in pursuance of the provisions of the old railroad act which authorized the grants of lands under water and other State lands to railroad corporations for railroad purposes.

Subsequently and on November 9, 1886, letters-patent were issued by the Commissioners of the Land Office to Peter McCabe and Charles H. McCabe, alleged predecessors in title of the petitioners herein, which purported to grant to the said McCabes a strip of land under the waters of the Hudson river known at that point as Schodack creek in the town of Stuyvesant, Columbia county. Such strip of land purported to be in front of and adjacent to uplands owned by the said McCabes. It was undoubtedly the intent in granting such letters-patent to convey lands under water outside of the exterior line of the New York Central Railroad Company but the grant as made was in accordance with the application map prepared by the engineers employed by the McCabes which erroneously described the right of way of the railroad company as only ninety-nine (99) feet wide instead of one hundred and twenty-nine and one-half ($129\frac{1}{2}$) feet as shown on the railroad company's map referred to in the patent to the railroad company. So apparently owing to the erroneous location of the railroad company's lands on the McCabe application map, the land granted to the McCabes overlapped lands which were granted in 1873 by similar letters-patent to the railroad company by about twenty-nine and thirty-seven hundredths (29.37) feet.

In the petition herein the petitioner claims the right to possess and use the strip which overlaps the railroad company's grant but does not base such claim upon the letters-patent of 1886 to the McCabes. The petitioner claims that at the time of the patent to the railroad company in 1873 it was in possession of a dock or wharf built on the premises in question under the common law

right or usage of this State as riparian owner to reach the channel of the river and that, being in possession of such dock or wharf, the Land Board was without power to make a grant to the railroad company in 1873.

This matter comes to the Attorney-General after the trial of an action of ejectment brought by the New York Central and Hudson River Railroad Company against the National Ice Company, the immediate grantor of the petitioner herein, and in which action Mr. Justice Chester has made and rendered his written decision bearing date March 26, 1916, containing his findings of fact and conclusions of law with respect to the subject-matter of this controversy. An appeal has been taken by the National Ice Company from the judgment entered upon the basis of such decision and is now pending in the Appellate Division of the Supreme Court in the Third Department.

The petitioner claims in article 7 of its petition that on the 26th of December, 1873, and for more than seventy-five years before that day, petitioner's predecessors had erected and used a dock or wharf built upon lands under water adjacent to and lying in front of the uplands of Robert F. Johnson and west of the west line of the lands conveyed by said Johnson to the Hudson River Railroad Company known as parcel No. 201 by deed dated September 21, 1850.

The claim of the petitioner is that on September 21, 1850, and for many years before, the ancient dock was standing upon the lands under water in question and remained there in the use and occupation of the subsequent owners of the uplands until it was removed in 1893 preparatory to the building of a new dock and the erection of an ice house now standing thereon.

It is further claimed that the ancient dock was a structure that the owners of the uplands had a perfect right to erect and use and that the State cannot compel a riparian owner to remove a wharf erected by him, without his obtaining a grant from the State, in the shoal waters in front of his uplands and reaching to the navigable part of the stream, on the ground simply that it is a preposterure, when it is not shown that such wharf is actually a nuisance or an obstruction to navigation.

It is further claimed that since the State never took any action to deprive petitioner's predecessors in title of the right to the possession and use of such ancient dock, the lands under water involved in this application were, at the time letters-patent of December 26, 1873, were issued to the railroad company, in the actual possession of the petitioner's predecessors in title claiming under a title adverse to that of the State and that the grant of 1873 to the railroad, in so far as the State undertook to convey the lands under water upon which the ancient dock was erected, was absolutely void.

The theory, upon which the petitioner asks that an action be brought by the Attorney-General to vacate in part the letters-patent to the railroad company, is that so far as the parcel of land in question is concerned, upon which the ancient dock was erected and upon which the present ice house stands, the letters-patent were obtained by means of a fraudulent suggestion or concealment of a material fact made by or with the knowledge or consent of the railroad company at the time of the grant, within the provisions of section 1957 of the Code of Civil Procedure. It is claimed by the petitioner that the railroad company, at the time of the grant to it in 1873, had knowledge of the existence of this ancient dock and fraudulently concealed its existence from the Commissioners of the Land Office.

I find, however, from an examination of the record on appeal in the above-mentioned action of ejectment brought by the railroad company against the ice company that Mr. Justice Chester in his findings and decision has found all the facts with respect to such adverse possession of the old dock property in the railroad company's favor and from my examination of the records before me, I see no reason to disagree with his conclusions or to interrupt the orderly prosecution of the appeal now pending in the Appellate Division from the judgment entered upon such decision.

Having no good reason to believe that the facts required to be established by section 1957 of the Code can be proved, since Mr. Justice Chester has found that no adverse title existed in the petitioner's predecessors in title at the time of the granting

of letters-patent in 1873 to the railroad company, I am disposed to deny the application upon that ground.

I am further influenced to that conclusion by the opinion of my predecessor, Attorney-General Hancock, in the matter of the application of the Brockway Brick Company, dated December 2, 1897 and reported in the opinions of the Attorney-General of that year at page 395.

Mr. Justice Chester in his decision in the said ejectment action found that in 1850 the said Robert F. Johnson had deeded to the railroad company a parcel of land known as Lot No. 201 which was bounded on the west by the high-water mark of the Hudson river and refused to find at the request of the ice company that at the time when said Johnson conveyed said parcel No. 201 to the railroad company, there were to the west thereof uplands above high-water mark of the Hudson river. Mr. Justice Chester further refused a finding, requested by the ice company, that there was an ancient dock adjacent to uplands lying above high-water mark of the Hudson river and west of said parcel No. 201. Assuming, however, the existence of such ancient dock upon lands under water adjacent to such uplands and lying west of said parcel No. 201 and assuming the existence of such ancient dock at the time of the grant to the railroad in 1873 and for many years prior thereto, I feel compelled to disagree with the learned counsel for the petitioner that the possession of such dock or wharf gave to petitioner's predecessors in title a title adverse to the State such that the Land Board was without power to make a grant to the railroad company in 1873.

The petitioner relies on the case of *People v. Mould* 37 App. Div. 35; *Town of Brookhaven v. Smith*, 188 N. Y. 74, and other cases, in support of the proposition that the riparian owner is entitled to construct a pier out to the navigable waters without a grant from the Land Board. This right, however, under the common-law right or usage of this State to construct a pier, did not vest in the riparian owner any title to the lands under water upon the construction of such a pier. Title to the lands under water remained in the State and such lands were subject to grant. If the title of the State was affected at all, it was only burdened with an easement, at most, a right of access in

favor of the owner of the adjoining uplands to build wharves out to navigable waters or to cross the lands of the railroad in order to get such access. It was not and has never been the usage in this State as disclosed by the authorities to give to the upland owner more than this easement. The usage which has grown up in this State under which it has been recognized that it is lawful to erect a pier out to the navigable waters has been sustained simply upon the ground that the pier made the right of access practical for the complete and innocent enjoyment of that right. The ice company had no patent from the State granting to it or its predecessors the title to any of the lands in question under water except the patent of 1886 which was junior to the patent of the railroad company of 1873 and the ice company never had any title to such lands in question and has none now. They have simply those rights of access as riparian owners which have been described in the cases while the railroad company has the title of the State to the lands under a patent which has been sustained over and over again.

It is therefore my opinion that the petitioner, after the grant to the railroad company, merely had the right to cross the railroad company's right of way by a suitable route to the river front and to so much of its pier as lay outside of the lands under water granted to the railroad company. See *Saunders v. New York Central, etc. R. R. Co.*, 144 N. Y. 86, where it was held that riparian owners by filling in lands under water acquired no title by the process of reclamation. And it was also held in that case that the title of the railroad company under the grant from the Commissioners of the Land Office made in 1873 was valid.

One of the difficulties of the petitioner here is that it is not an old wharf that is sought to be removed. The real underlying proposition is as to the right of the ice company to erect an ice house upon land to which it has no title. Title and general beneficial enjoyment are confused with right of access and sought to be predicated upon it. However far the *Mould* case may have gone in sustaining the right of an upland owner to erect a pier, neither that case nor any other case which has been brought to my attention has sustained the right to erect further structures upon any such pier such as an ice house. That would be carry-

ing beyond its fair intendment the common-law right or usage of this State under which a riparian owner has been permitted to make his right of access to navigable waters practical by the erection of a pier. A pier is a structure extending from solid land out into the waters of a river, lake, harbor, etc., to afford convenient passage for persons and property to and from vessels along the sides of the pier. A wharf is similarly described as a structure extending some distance into the water for the convenience of lading and unlading ships and other vessels. The fundamental idea of a pier or a wharf is that of a broad, plain place near a river or other water to lay wares on that are brought to or from the water. It is simply a convenient loading and unloading place. *Seabright v. Allgor*, 69 N. J. Law 641, 56 Atl. 287; *Langdon v. Mayor*, 93 N. Y. 129, at page 151. See also Webster and Cowell.

If such ancient dock ever existed in the manner and at the time claimed by the petitioner, the building of the dock gave to the builder no title to the land under water upon which it was built. There was at most only an ownership of the structure if we are to follow the case of *City of Brooklyn v. Mackay*, 13 App. Div. 105. The railroad company became the owner of the land under the letters-patent of 1873. Twenty years afterward the successor of the owner of the dock could not erect an ice house on such land and claim title to the land or even the right to the possession and use of the land for such purpose. The case of *City of Brooklyn v. Mackay*, *supra*, did not decide that a riparian owner may erect such a superstructure upon lands granted to his neighbor. That case involved simply the right to compensation for condemnation of the dock structure.

If the petitioner's predecessors in title were in actual possession of the lands in question under a title adverse to the State at the time of its grant to the railroad company in 1873, it seems clear to me that under the *Lally* case, 123 App. Div. 35, the issue can be decided by a suit in equity to remove a cloud on title created by a patent which was absolutely void so far as it purported to grant title to lands so adversely held.

If such possession was not adverse but the petitioner's predecessors in title had property rights in such dock structure, not taken into consideration by the State at the time of the grant

to the railroad company, through the fraudulent suppression of the fact by the railroad company, it seems equally clear to me that the action of the State at that time or the refusal of the State to bring this action at this time works *damnum absque injuria*, since the petitioner is not seeking to continue the use of the ancient dock, as such, as a means of access to navigable waters for it has always had a clear right of access by crossing the railroad company's right of way. What the petitioner is seeking to prevent at this time is its loss of use of the lands in question for the erection and continued use of an ice house thereon, being on lands not owned by it and over which it simply had an easement for crossing purposes which the courts have said could be expanded so as to include the right to erect a pier or wharf in order to make access to navigable waters practical. It is entitled to no more than is reasonably adequate to the enjoyment of the rights of access and the courts have not, in any case called to my attention, recognized any common law, right or usage in this State extending the doctrine to include the right to erect a superstructure upon such pier or wharf for other beneficial use or enjoyment.

Moreover if the view of the petitioner is correct, that it has the same rights under the common law or usage of this State as it would have under a grant from the Land Board, then it would seem to be folly for riparian owners to pay the State consideration for lands granted to them in fee by the Land Board. The McCabe Brothers when they applied in 1886 for a water grant conceded that the State was the owner of the land under water outside of the right of way of the railroad company and they were willing to and did pay the State a consideration for the grant which was made to them in 1886.

In view of all of these circumstances, I am compelled to reach the conclusion that I am not justified in authorizing the institution of an action such as is proposed in this application and particularly at this time in view of the action pending in the Appellate Division between the parties represented here.

Application denied.

(Signed) MERTON E. LEWIS,
Attorney-General.

Dated, October 10, 1918.

BEFORE THE ATTORNEY-GENERAL

In the Matter of the Application of JOHN D. LANGHAM for the commencement of an action in the nature of *quo warranto* to test the title to the office of Supervisor of the Town of Murray in the County of Orleans.

This is an application made by John D. Langham for the commencement of an action in the nature of *quo warranto* against James A. Balcom to try the title to the office of Supervisor of the town of Murray, in the county of Orleans, and to oust and exclude the respondent from said office of Supervisor.

APPEARANCES

Jay K. Smith, Attorney for the Petitioner.
Thompson Bros., Attorneys for Respondent.

FACTS

At the town election held in the town of Murray, Orleans county, on the 5th day of March, 1918, the petitioner, John D. Langham, was the candidate of the Democratic party for the office of Supervisor of said town and the respondent was the candidate of the Republican party for such office, both of whom were eligible to hold the office of Supervisor if elected thereto.

The town of Murray is divided into five election districts, and the town election was conducted by the various election boards, in the several districts.

Upon the canvass made by the town board of all the five districts of the said town of Murray, as returned by the several district election boards, it was found that the vote upon Supervisor stood as follows:

Mr. Balcom	687
Mr. Langham	624
	<hr/>
Making a majority for Mr. Balcom of.....	63
	<hr/> <hr/>

A certificate of election was duly issued to Mr. Balcom and he duly qualified for the office of Supervisor, and entered upon the discharge of his duties and is still acting.

No objection is made by the petitioner to the count or canvass in any district of said town except District No. 1 and no consideration will be given in this report to the canvass in any district except No. 1.

The canvass in District No. 1, so far as it related to the office of Supervisor, as returned by the board of election was as follows:

James Balcom	140
John Langham	49
Blank votes	8
Void votes	6
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Total	203
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It was alleged by the petitioner that the return showed that there were 116 void ballots in District No. 1 which were evidently counted for one or the other candidates and as it would be impossible to take 116 void ballots out of a total vote of 203 and leave each candidate with the number cast for him as certified by the election board, it was claimed that a mistake had occurred in some manner, and that as Mr. Balcom's total majority was only 63, a proper count of the votes in which the 116 void ballots would be excluded, would probably change the result. The petitioner's whole argument is based upon the hypothesis that there were 116 wholly void ballots found in that district that should be excluded from the count, and that his only remedy for a correct count was through the medium of an action in the nature of quo warranto.

Upon analysis of the official return and the official tally sheet, it appears that there were possibly eight wholly void ballots cast in that district. There is a slight discrepancy in the number of void votes given for the several offices voted for in the district and it will be noted that if two more void votes had been listed in the tabulation on the office of Supervisor, and both taken off of Mr. Balcom's total vote, he would still have 89 majority in that district instead of 91, and could only reduce his total majority in the town to 61 instead of 63 as found by the board. This could not in any way change the result.

It is very apparent that the petitioner adopted an erroneous method in figuring out a total of 116 void ballots in that district. A separate tally was kept of each group of candidates, and a separate page was given in the return for each group and while there were six or eight wholly void ballots listed in each group, they were all found in the same six or eight wholly void ballots, but the petitioner evidently added the number of void ballots shown in each group together and with some additional ballots which were thrown out in the group of Constables, on account of some voters voting for a greater number of Constables than they were entitled to, and whose votes were also listed as "void," he succeeded in reaching the number of 116.

The void votes shown upon the official return for the various offices are as follows: Supervisor, 6; Town Clerk, 7; Collector, 7; Overseer of the Poor, 7; Town Superintendent of Highways, 8; Justice of the Peace, full term, 14 (there were two justices elected for full term, hence the void ballots were doubled); Justice of the Peace, to fill vacancy, 8; Justice of the Peace, to fill second vacancy, 8; Justice of the Peace, to fill second vacancy, 7; Assessor, 4-year term, 7; Assessor, 2-year term, 7; Constables, 44.

It was established that there were some sixteen ballots found upon which the voters had voted for more than four candidates for Constables and that such sixteen ballots were listed as "void votes" instead of "blank" as they should have been, which 16 ballots added to the 28 void ballots made up the number 44 of "void votes" as returned by the inspectors. It will be seen that by adding all of the "void votes" listed by the inspectors as above indicated they reach the number of 122.

It seems certain that there were only seven "void" ballots found in that district, but through some errors in tallying there are slight discrepancies between the number listed by the inspectors in the several groups of candidates, but if the highest number of void votes is allowed, to wit, eight, it would not change the result and Mr. Balcom would still have a clear majority of at least 61.

The ballots of said town meeting were locked in the respective boxes and placed in the Town Hall at Hulberton and remained in that condition until shortly prior to the Primary on the 3d

of September, 1918. The Town Clerk, one Lena J. Hayes, shortly prior to such primary, went to the Town Hall to prepare the ballot boxes belonging to said town for use at such primary, and found they still contained the ballots used at the biennial town meeting. Not being aware of the statutory provision requiring such ballots to be preserved inviolate for a period of six months after the election, and not deeming the further preservation of such ballots of any importance, she emptied such ballots, together with the ballots from the other districts, into an open basket where they remained unlocked and unprotected in an open hall for several days until she was directed by an order issued by a Justice of the Supreme Court to preserve said ballots. Immediately upon receipt of such order she went to the Town Hall and gathered up the ballots found in the basket and placed them in a box for safe-keeping. She is unable and unwilling to swear that all the ballots that were originally in the boxes and emptied into the basket remained therein and were placed in a box after she had been served with the order.

REPORT

If an action was allowed to be commenced it is exceedingly doubtful that any Court would allow the introduction of the ballots in evidence if the condition in which they had been kept was disclosed, and of course it would be, but aside from the question as to the admissibility of such ballots in evidence, I am thoroughly convinced and satisfied that the petitioner could not succeed even if the ballots were allowed in evidence in changing the result by over two votes, and that the respondent was clearly elected by a majority of at least 61 over the petitioner; and that an action to test the title to the office would only result in defeat to the petitioner.

I do, therefore, recommend that this application be denied.

Dated November 25, 1918.

GEORGE A. FISHER,
Second Deputy Attorney-General.

Approved, and application denied this 25th day of November.
1918.

MERTON E. LEWIS,
Attorney-General.

BEFORE THE ATTORNEY-GENERAL OF THE STATE OF NEW YORK

In the Matter of the Petition of ESTELLE B. MILLER re MILLER,

TOMPKINS & Co.

THE DECISION OF THE ATTORNEY-GENERAL ON APPLICATION BY

PETITIONER

The petitioner prays that proceedings may be instituted by the Attorney-General for the dissolution of Miller, Tompkins & Company under section 131 of the General Corporation Law or, in the alternative, for the removal of respondents States D. Tompkins and Francis J. McKee from the offices of president and treasurer, respectively, of said corporation or their suspension; together with the appointment of a receiver.

After a brief experience as a trading partnership, consisting of the petitioner's husband, Albert O. Miller, and Messrs. Tompkins and McKee, a corporation was formed by these gentlemen in the year 1897. It had small beginning, starting with a nominal capital of \$30,000, divided into 6,000 shares of \$5 each. These shares were distributed as follows:

Estelle B. Miller.....	2,247
A. O. Miller.....	1
States D. Tompkins.....	2,618
F. J. McKee.....	1,134
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The real party in interest was Mr. Miller, and his wife held the shares belonging to him in her name.

Messrs. Miller, Tompkins and McKee were all active in the management of the business. The efforts of all combined to bring prosperity, which war times appear to have augmented, with the result that by the year 1916 the earnings of the company, prior to the payment of dividends and "extra salaries," amounted to over \$100,000, and in 1917 to \$156,000.

Up to 1916 dividends of 8 per cent were paid on the stock, and small regular salaries were also paid, but the bulk of the profits was distributed in the form of so-called "extra salaries."

In 1915 the amounts distributed by these three methods were as follows:

Regular salaries	\$7,540 00
Extra "salaries"—	
Miller	19,034 92
Tompkins	19,034 92
McKee	4,229 94
Dividends on stock at 8 per cent...	2,400 00

During the year 1916, this system was changed—the payment of the so-called "extra salaries" was abandoned and payments were made as follows in 1916 and 1917:

1916

Regular salaries	\$7,540 00
Payments liquidating "personal accounts"—	
Miller	34,181 01
Tompkins	32,081 01
McKee	7,814 86
Dividends to stockholders at 90 per cent	27,000 00

1917

Weekly salaries	7,540 00
Dividends to stockholders at 520 per cent	156,000 00

It is obvious that so long as Messrs. Miller, Tompkins and McKee were working together harmoniously in this close corporation it was entirely immaterial to them whether the earnings were distributed under the name of salaries or under the name of dividends.

There was no necessity for attempting to determine what would be a fair salary to be paid for the services as distinguished from the investment by each member of the corporation. In fact, their services during the twenty years since the foundation of the business had created the investment since the original investment of

capital was small and the tangible capital has never greatly exceeded \$30,000.

After 1917 disputes between Mr. Miller on the one hand and Mr. Tompkins and Mr. McKee on the other became acute, and finally, about May, 1918, Mr. Miller preferred to sever his active connection with the business and associate himself with another enterprise, partially competing.

The charges which form the basis of this application consist of a contention that Messrs. Tompkins and McKee, the present officers, have violated the law by misstating in tax reports the earnings of the corporation with the intent of evading taxation; and of the assertion that Messrs. Tompkins and McKee, together majority stockholders, proposed to defraud the petitioner (or rather her husband, the real owner), as minority stockholder, of her rights.

The facts upon which these contentions rest are as follows:

As has been stated, in the years 1916 and 1917 the plan of distributing the bulk of the profits in the form of extra salaries had been abandoned, and instead, profits had been distributed as dividends. The 1917 dividend, \$156,000, or 520 per cent of the capital stock, if reported to the taxing authorities of the United States and of the State of New York as the actual earnings, presented a serious situation for the owners of this company by reason especially of the federal excess profits tax.

About April, 1918, as the time within which a federal tax report might be filed was drawing to a close, the officers of the company caused a balance sheet to be prepared, upon which \$126,000 out of the \$156,000 distributed as dividends was added to the item of general expenses under the head of "Salaries to Officers." In other words, for purposes of the tax report, the dividends were decreased to 100 per cent and the remainder of the 520 per cent treated as salaries. This produced the following result for 1917:

Weekly salaries	\$7,540
Extra "salaries"—	
Miller	56,700
Tompkins	56,700
McKee	12,600
Dividends to stockholders at 100 percent.	30,000

=====

What gave this transaction an ugly look was the fact that an attempt was made to alter the books, including notations on the check stubs. This attempt had to be abandoned because of the lack of technique in the art of forgery.

I have little difficulty in concluding that both petitioner's husband, Mr. Miller, and respondent, Mr. Tompkins, were fully cognizant of the fact that it was proposed to make a tax report on a different basis from the entries appearing in the books of the company. The attempt of each side to blame it exclusively on the other was unconvincing.

Subsequently Mr. Miller ceased to have any active connection with the company; bad blood became worse; and at the annual meeting of the stockholders in May, 1918, Messrs. Tompkins and McKee voted themselves salaries of \$115,000 for the remaining seven months of the year 1918. They have testified that they then believed and still believe that the entire net earnings for the whole year of 1918 would be as good as or better than last year's, i. e., \$156,000 or more.

Inasmuch as the company's business appears to earn profits with reasonable regularity from month to month, it is obvious that the pro rata earnings for the last seven months of 1918 could not amount in their entirety to as much as \$115,000, so that, in order to pay such a sum for seven months, it would be necessary to draw upon the earnings accumulated in the first five months of the year, during which no salaries or dividends were paid.

I am clearly of the opinion that if \$115,000 should be paid as salaries for seven months of 1918, such payment would be in violation of the rights of the petitioner as a stockholder. It is questionable if such payment would not be excessive for twelve months. Furthermore, if such alleged salary payments were treated as expenses rather than earnings in making tax reports, there would be a fraud upon the federal and State governments.

I am also of the opinion that the attribution of \$126,000 out of \$156,000 of the profits of 1917 to salaries was in excess of the value of the services rendered by the officers.

It is quite probable that, in view of the artificiality of the method of bookkeeping, whereby practically the the entire profits were distributed as dividends in 1916 and 1917 and salaries left at a sum much below the value of the services rendered, it would

have been not unjustifiable to make tax reports on a different basis from that on which the books were kept. The system of book-keeping which happened to have been adopted was not binding on the company and its officers to the extent that when it did not fairly represent the true merits of the situation it could not be altered for purposes of tax reports by consent of all stockholders (no creditors' interests being affected) so as to produce a fairer result. However, it seems plain that the company has actual capital which earned dividends largely in excess of \$30,000. And although the value of the personal services of the officers of the company exceeded the fixed salaries paid for years of \$7,540, it was considerably less than the \$126,000 additional. It is true that the tangible capital was small, but it is evident that the combined efforts of the owners of this company during the twenty years of its existence had built up a valuable intangible capital, consisting of good will, trademarks and, in general, the values that appertain to a going concern. The jealousy with which the respondent seeks to protect its list of customers shows how real these values are. They give actual value to the capital stock far in excess of its nominal value. These values have been produced by twenty years of effort of all the members of the company, and it is far from the fact that the withdrawal by Mr. Miller from rendering any personal service to the company entitles his former associates to absorb practically all of the profits in the form of salaries.

I conclude, therefore, that the members of the company, including the petitioner's husband, have not dealt fairly with the taxing authorities and that the action taken by Messrs. Tompkins and McKee with respect to salaries for 1918 is not fair to the petitioner.

It does not necessarily follow from these conclusions, however, that this application should be granted. For the simple wrong of a minority stockholder by the majority, the petitioner has her remedy (*Godley v. Crandall & Godley Co.*, 212 N. Y. 121), and no public interest is involved (*Peo. v. North River S. R. Co.*, 121 N. Y. 582; *People v. Buffalo Stone & Cement Co.*, 131 N. Y. 140).

The palpable evasion of taxation presents a question of public interest undoubtedly, and the question arises whether the drastic remedies of removal of the offending officers or annulling the existence of the corporation are warranted.

Under section 90 of the General Corporation Law an officer may be suspended "where it appears that he has abused his trust" and may be removed "upon proof or conviction of misconduct."

Since this is a close corporation, it may readily be believed that the good will of the company, one of its most valuable assets, is closely identified in the trade with the personality of its officers. Without doubt, to remove the present officers would be to destroy in large measure the earning capacity of the company. Whatever may be the situation in law, commercially the company is so closely identified with its owners and officers that the removal of the officers might be the substantial equivalent of a dissolution of the company; unless, perhaps, so managed as to bring about simply the handing over of the company from the majority interest to the minority interest. The removal of the officers then could not be justified unless the dissolution of the corporation itself would be justified.

Assuming but not asserting definitely that the evasion of taxation was with the worst of intentions and highly fraudulent in character, still I do not believe that the dissolution of the corporation is the proper remedy.

Under section 131 of the General Corporation Law, the Attorney-General may bring an action to annul the existence of a corporation upon the ground, among others, that it has "violated any provision of law, whereby it has forfeited its charter, or become liable to be dissolved, by the abuse of its powers." This is the only provision of the section which can possibly be deemed pertinent. It will be observed that not every violation of provisions of law warrants the drastic judgment of dissolution. It must be a violation whereby the corporation has forfeited its charter *ipso facto*; or become liable to be dissolved by reason of what is defined as the "abuse of its powers." I question if the making of a false tax report comes within the definition of an abuse of the corporate powers. There is a dictum in *People ex*

rel. *Knickerbocker Press v. Barker*, 87 Hun, 341, affirmed on opinion below, 147 N. Y. 715, to the effect that if the location of the principal office of the corporation was wilfully misstated in a certificate filed with the Secretary of State or if the corporation should change its principal place of business, without effecting a legal change of address, for the purpose of evading taxation, it might present a case for dissolution under the above cited statutory provision.

Giving this dictum the effect of a decision, I may still observe that in the *Knickerbocker Press* case, there was an exercise of corporate power in the form of a filing of a certificate with the Secretary of State and purported change of the principal place of business. These matters go to the heart of corporate existence; not so the mere detail of corporate action of filing a tax report.

Furthermore, the federal and State taxation laws provide specific remedies for the vindication of public justice in the case of the evasion of taxation through the making of false tax reports. It is a general rule, and a good one, that when the law expressly provides a remedy, it will not imply some other and different remedy. (*People ex rel. Childs v. Knott*, 104 Misc. 378; *People v. Hislop*, 177 N. Y. 331). It is to be assumed that if the corporation and its officers have done wrong, they will have been sufficiently punished by being compelled to pay the penalty which the tax laws provide, without the additional punishment of suffering a dissolution of the corporation.

For the foregoing reasons, the application must be denied.

Dated, New York, December 31, 1918.

MERTON E. LEWIS,

Attorney-General.

By

ALFRED L. BECKER,

Deputy in Charge.

**OPINIONS RENDERED TO COMMISSIONERS OF
THE LAND OFFICE**

OPINIONS RENDERED TO COMMISSIONERS OF THE LAND OFFICE

BEFORE THE COMMISSIONERS OF THE LAND
OFFICE

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *January 22, 1918.*

In the Matter of the Application of M. P. NEAL to acquire the
State's interest in and to certain tax lands.

To the Commissioners of the Land Office:

GENTLEMEN.— This application by a non-owner for the advertisement and sale at public auction of lots 5 and 6, Fortification Block 2, Oswego City, west and offering to bid \$200 per lot, was referred to me on August 21, 1917, together with a report thereon of the State Comptroller to be found in the Land Board minutes of 1917, at page 142.

The report of the Comptroller shows that lot 5 was covered by a bond to the State, upon which there was due with many years accumulation of interest and taxes \$9,674.57; that both lots 5 and 6 were sold at the Oswego County Treasurer's tax sale of 1884 as one parcel and bid in thereat for the State for \$118.62; and that the State has no other interest in lot 6 other than under said tax sale.

A subsequent report was made by the State Comptroller, dated November 16, 1917, showing that default had been made on bond of Luther Wright's Bank, dated May 6, 1856, for a part of purchase price of said lot 5 and that no payment of any part of principal or interest on such bond had been made since September 19, 1872; and this further report was referred to me for my opinion as to the proper action which should be taken to collect the amount due the State on such bond.

My report thereon to your Honorable Board, dated November 20, 1917 (see Land Board Minutes, 1917, p. 180), stated that

in view of the fact that this bond was given over sixty years ago and no payment on account of principal or interest had been made thereon since 1872, the statute of limitations prevented the bringing of an action on the bond, and I recommended that the Board adopt the usual course directed by statute to direct a resale of the bonded lands under the direction of the State Engineer and Surveyor which would effect a forfeiture of the moneys actually paid into the State Treasury by Luther Wright's Bank and that after resale, if lot 5 should be bid in by the State the Board would then be in a proper position to sell such lot at its real value.

My report further showed that lots 5 and 6 were appraised by the official appraisers of the Land Board at \$800 each, showing a great depreciation in their value since 1856.

The State Engineer and Surveyor has just reported to your Honorable Board, under date of January 22, 1918, that pursuant to direction of your Board adopted November 21, 1917, he has duly advertised and on January 21, 1918, sold said bonded lot 5 for the amount remaining unpaid on said bond with addition of interest, taxes, etc., amounting in all to \$11,058.67, and that there being no bidders at the sale, said lot was bid in for the State for that amount.

I do, therefore, now approve as to form the application of M. P. Neal for the advertisement and sale at public auction of the State's interests in both lots 5 and 6 as unappropriated State lands.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *February 19, 1918.*

To the Commissioners of the Land Office:

GENTLEMEN.—I beg to advise that one Josephine Turner died intestate at her residence in the city of Utica, Oneida county, N. Y., on or about August 7, 1917. At the time of her death

she was seized in fee of the premises commonly known as 221 Leah street, Utica, N. Y., more particularly described as follows:

"All that tract or parcel of land situate in the city of Utica, county of Oneida and State of New York, lying and being in the seventh ward of the city of Utica, bounded and described as follows, to wit: Beginning at a point on the north side of Leah street 84 feet easterly from the corner of Leah and Miller streets, running thence north at right angles to Leah street 46 feet; thence easterly and parallel with Leah street 40 feet; thence south at right angles to Leah street 46 feet to Leah street, thence west along the north side of Leah street 40 feet to the place of beginning."

These premises consist of a two-family house, one part of which is at the present time occupied by one David W. Williams, who was a tenant of the decedent, but no rent has been paid by Mr. Williams since the decedent's death. The other part was occupied by the decedent and has remained unoccupied since her death. It is in rentable condition but no one has been given authority to rent the same.

On September 24, 1917, Charles E. Hooper, Treasurer of Oneida county, was appointed administrator of the decedent's personal estate, but as such personal estate is more than sufficient to take care of any debts she may have had, said administrator has not nor will he unless specially designated, take any steps toward looking after the realty.

There are many reliable real estate agents in the city of Utica who would be in a position to look after these premises for a reasonable commission, and I would suggest that you empower the Comptroller to designate such an agent or some other suitable person to collect the past due and future rents and endeavor to rent the unoccupied portion of the building.

There has also been called to my attention the fact that city taxes for the year 1917 have been charged by the city of Utica against this property, but whether the same are a lien I am not in a position to say at the present time. If they are a lien, steps should be taken to pay the same; if not a lien, such taxes should be cancelled.

The Consolidated Water Co., of Utica, N. Y., has also presented two bills for water consumed on the premises, amounting to \$3.10. The same remarks are applicable to this bill as to the bill for taxes for 1917.

If arrangements are made for the renting of this property, I would suggest that some provision be made for the tenant or tenants to pay the amount of any future accruing water rents which appear to be payable monthly.

An action to establish the escheat of this real property has been commenced, and a further report will be made when a judgment is procured and entered.

Very truly yours,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *February* 19, 1918.

To the Commissioners of the Land Office:

GENTLEMEN.—Your standing committee having considered that several applications for lands under water of Lake Erie, in the city of Buffalo have been made pursuant to chapter 616, Laws of 1913, which act authorizes your honorable board “in their discretion” to grant to upland owners lands under water lying between the shore line of 1841 as fixed by section 2 of said act and the United States harbor line and which said shore line due to erosion has actually receded several hundred feet back to the present shore line; that in some cases the applicants have only applied for a grant of the lands under water outside of said arbitrary shore line of 1841, and in other cases applications were made for water grants from the present shore line, have concluded to recommend that your honorable board determine by resolution that hereafter no grants be made of lands outside of the said line fixed by section 2 of chapter 616, Laws of 1913, unless and until the applicants therefor shall also apply

and pay for the lands under water intervening between said shore line fixed by said section 2 and the present shore line.

MERTON E. LEWIS,
Attorney-General.

JAMES L. WELLS,
Treasurer.

FRANK M. WILLIAMS,
State Engineer and Surveyor.

Resolved, That hereafter no grants be ordered of lands under the waters of Lake Erie in or about the city of Buffalo, under the provisions of chapter 616, Laws of 1913, unless and until the applicants therefor shall also at the same time apply and pay for the lands under water lying between the present high-water mark bounding the adjacent uplands and the arbitrary line fixed by section 2 of said act.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *March* 13, 1918.

BEFORE THE COMMISSIONERS OF THE LAND OFFICE
COUNTY COURT — NASSAU COUNTY.
LENA JACKSON, Plaintiff, v. LOUISE A. WEBER and the PEOPLE
OF THE STATE OF NEW YORK, et al., Defendants.

The Commissioners of the Land Office:

GENTLEMEN.— This is a request by the plaintiff above named that the Commissioners of the Land Office determine whether or not the interests of the State warrant the making of an order for the payment of the mortgage which the plaintiff desires to foreclose in the above-entitled action. It appears from the complaint herein, and from the verified statement filed with your honorable board that the above is an action brought to foreclose a mortgage covering a lot of land 48 x 225 feet, situate at Wantagh Harbor in the town of Hempstead, Nassau county, on the corner of Cornelius avenue and Vanderbilt place, known as

Lot No. 333 on the map of Wantagh Harbor filed in the Nassau County Clerk's office May 19, 1904. This mortgage was given by Charles Koehler and Margaret G., his wife, to Lena Jackson, the plaintiff, to secure the payment of \$100 and interest, and was dated April 30, 1913. It is alleged that there is now due thereon the principal sum of \$100 together with interest thereon from May 1, 1914, at the rate of 6 per cent per annum, and that the value of the mortgaged premises is from \$300 to \$500, the same being unimproved real estate. It further appears that the mortgaged premises were owned at the time said mortgage was executed by the mortgagors as tenants by the entirety; that on November 23, 1913 said Margaret G. Koehler died intestate, leaving her surviving as her only heir at law the defendant, Louise A. Weber, that on April 26, 1914, Charles Koehler, the surviving owner of said premises died intestate without leaving heirs at law, and that said property escheated to the State, subject to the lien of said mortgage.

Miss Weber, the step-daughter of Charles Koehler, is not a person entitled by the Public Lands Law to apply for a release of the State's interests in said premises. In the petition to the Land Board the plaintiff's attorney states that the principal and interest accrued on the mortgage, with unpaid taxes and costs of foreclosure, will amount to more than the value of the property.

Chapter 529 of the Laws of 1916 amends the Public Lands Law by authorizing the Commissioners of the Land Office, whenever they deem it for the best interests of the State, to order the Treasurer, on the warrant of the Comptroller, to pay off and cancel any charges, assessments or encumbrances existing on any lands belonging to the State, or in which the State has an interest, or to acquire any outstanding undivided interest in such lands adverse to the title of the State, to perfect in the State a title to any such lands, or to protect the State's interests therein and appropriated \$5,000 for such purposes.

Section 275 of the Real Property Law provides that:

"Whenever a mortgage upon real property shall be due and payable the mortgagee or the owner and holder of the

mortgage shall execute and deliver to any person or persons, or corporation, named by the owner of the land upon which the same is a lien, an assignment of the mortgage duly executed which may by its terms be without recourse to the assignor in any event and discharge such assignor from any liability thereunder to the assignee; provided a demand has been made of the holder of the mortgage by the owner of the land upon which the same is a lien for such assignment in lieu of a certificate of discharge of the same, and the full amount of principal and interest due on the mortgage and the usual fee for drawing the assignment is tendered or paid."

I would therefore recommend that your honorable board cause the mortgaged premises to be appraised and procure statement of taxes due on said premises from the local authorities; and should it then appear that there is any substantial equity in the state in said mortgaged premises, by reason of said escheat, I recommend that your honorable board direct that the secretary of this board order the State Treasurer, on the warrant of the Comptroller, to pay to the mortgagee the amount due upon such mortgage, together with interest and the usual fee for drawing the assignment, and also pay any valid unpaid taxes on said premises.

Respectfully submitted,
MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *March 27, 1918.*

In re The Petition of WILLIAM C. HOAG, as President of the Seneca Nation of Indians, dated, February 29, 1916.

To the Honorable The Commissioners of the Land Office:

The undersigned, being the standing committee of your Honorable Body, for the hearing of remonstrances, to whom was

referred the petition above mentioned, hereby submit the following report of our proceedings and recommendations:

1. The petition of William C. Hoag, president of the Seneca Nation of Indians, residing on the Allegany Reservation, with postoffice address at the city of Salamanca, N. Y., was duly presented to your Honorable Body on or about the 9th day of March, 1916, in behalf of said Seneca Nation of Indians and the same was duly referred to the committee above mentioned. Said committee at that time consisted of Egburt E. Woodbury, Attorney-General; James L. Wells, State Treasurer, and Frank M. Williams, State Engineer and Surveyor.

2. At a meeting of said committee appointed to be held at the office of the Secretary of State on the 28th day of November, 1916, said petitioner appeared in person and by Hudson Ansley, Esq., of the city of Salamanca, N. Y., as counsel for said Seneca Nation of Indians. The band of Cayugas residing upon the Seneca Indian Reservation appeared by Leroy Andrus, Esq., of the city of Buffalo, N. Y., and the Western band of Cayugas appeared by Ellis J. Staley, Esq., of the city of Albany, N. Y.

3. Thereupon your committee proceeded to consider said petition. Mr. Ansley addressed the committee in behalf of the Seneca Nation, and Mr. Andrus for the resident Cayugas. A copy of the stenographer's minutes of said hearing will be transmitted herewith.

4. The law questions involved in said petition were referred to the Attorney-General, whose opinion, in which we concur, accompanies this report.

5. The material facts, conclusions of law and recommendations adopted by us, may be briefly stated, as follows:

First. By chapter 255 of the Laws of 1909 the Legislature recognized the moral obligation of the State to pay to the Cayuga Nation of Indians, residing on the Allegany and Cattaraugus reservations, the profits realized by the State from the sale of the lands formerly owned and occupied by them, and authorized the Commissioners of the Land Office to adjust said claim by entering into an agreement with the resident Cayugas for the settlement thereof for a sum not exceeding the face of said claim with interest thereon from February 26, 1906. The amount of

the settlement was to be treated as a trust fund in the hands of the State Treasurer, and interest thereon at the rate of 5 per cent was to be paid annually to the resident Cayugas. Legitimate expenses for counsel fees were to be allowed by the terms of settlement and deducted from the principal sum so set apart as a trust fund.

Second. We are of opinion that the Legislature intended that the agreement above outlined, which was to finally settle and adjust a controversy of long standing between the Cayuga Nation and the State of New York, and which was to become the basis of permanent annuities, should be reduced to the form of a solemn compact or treaty and properly executed by the authorized representatives of both parties thereto; and this view is strengthened by the further requirement of the statute that the agreement, when finally consummated by and between the parties, should be subject to the approval of the Governor. This view is further strengthened by the practical construction placed upon the statute by the parties interested, as appears by the next succeeding paragraph.

Third. On the 19th day of June, 1909, at the city of Rochester, said claim was tentatively adjusted by allowing to the resident Cayugas the face of their claim with interest from February 27, 1906, amounting to the sum of \$297,131.20. An allowance to the attorneys of the Cayugas of the sum of \$27,131.20 was agreed upon, leaving as the basis for annuities the sum of \$270,000. This agreement was reduced to writing and properly executed. It was afterwards sent to Governor Hughes for his approval; but the same was returned without approval for reasons which need not here be stated. The agreement, as executed, was thereupon regarded as a nullity.

Fourth. After further investigation and consideration by the Commissioners of the Land Office and on or about the 26th day of July, 1911, the claim was rejected *in toto*, on the ground that the same was illegal and that the Board had no power to allow it or any part thereof. This action of the Board resulted in litigation, the Court of Appeals holding as set forth on page 5 of the Attorney-General's opinion. (*People ex rel Cayuga Nation v. Commissioners of the Land Office*, 207 N. Y. 42.) Among other things,

the court held that there had been no valid settlement for the reason that the Governor had not approved the same; that the Board had no jurisdiction to pass upon the legality of the claim after the Legislature had recognized it as a moral obligation, and that the Commissioners of the Land Office were bound to proceed and effect a final settlement under the authority vested in them by the statute.

Fifth. Acting under the order of the court, the Commissioners of the Land Office again undertook negotiations with representatives of the resident Cayugas and of the Western Band of said nation, who, in the meantime, had appeared and claimed a *pro rata* share of the final settlement. While the statute made no provision for adjusting the claims of the Western Band of Cayugas, the justice of their claim was recognized by the resident Cayugas, and an agreement was reached whereby the Western Band should receive one-third of any sum finally agreed upon. This view was approved by the Board and on the 23rd day of April, 1913, the Board adopted a resolution awarding to the resident Cayugas two-thirds of the face of their claim without interest, viz: \$165,072.89. Out of this sum it was agreed there should be paid to their attorneys the sum of \$18,215.89, leaving to draw interest the sum of \$146,857. If this settlement had been reduced to the form of a written agreement, and if the same had been properly executed and approved by the Governor, it would have become a valid and binding agreement between the State and the resident Cayugas, and the interest would have become due and payable annually thereafter upon the warrant of the Comptroller, out of funds, if any, appropriated by the Legislature for that purpose.

Sixth. But, as far as appears, these necessary steps have not been taken, and no valid and binding agreement has been concluded.

Seventh. The second section of the Act of 1909 reads as follows:

“If settlement of the claim shall be reached the commissioners of the land office shall be authorized thereafter to investigate and report to the legislature, whether a lease or purchase by the state from the Seneca Nation of Indians,

resident in the State of New York, of adequate lands for the use and occupation of said Cayuga Nation, and which shall be agreeable to said Nation, can be procured by the use for such purpose of sufficient of the principal sum aforesaid."

While the statute, upon its face, does not seem to bear out the suggestion, yet it is claimed by the attorney for the Seneca Nation that the Legislature consented to recognize the claim of the resident Cayugas for the very purpose of creating a fund out of which the just claim of the Senecas to compensation for the use of their lands, now and for many years past, occupied by the resident Cayugas, could be met and satisfied. No evidence on this subject is before us, and we express no opinion as to the legislative purpose in creating the fund; but it seems to us that it would be competent for the Governor to withhold his approval of a settlement which, while adding materially to the income of the Cayugas, makes no provision for the relief of the Seneca Nation, upon whose lands the Cayugas have lived, rent free, for many years, and maintained thereon an independent tribal organization. The Cayugas are seeking equity from the State; and, as a condition of granting them relief, they should be required to recognize their equitable obligations to the Senecas. If they refuse, we are of the opinion that the Legislature would be justified in refusing further appropriations and repealing chapter 255 of the Laws of 1909.

Eighth. We are of the opinion that the Legislature, by the appropriation act known as chapter 778 of the Laws of 1913, appropriating \$38,496.74 covering the allowances for counsel fees and expenses, pursuant to the resolutions of the Commissioners of the Land Office, and also the interest on the unexpended balance of the fund for one year, did not ratify the proposed settlement nor waive the reduction of said settlement to the form of a written agreement, nor the proper execution of such agreement and its approval by the Governor.

Ninth. We are of the opinion, further, that the payment of counsel fees, disbursements and annuities in the year 1913 and the payment of annuities out of subsequent appropriations were unauthorized and that such payments should not be continued unless the Legislature shall, by express legislation, so direct; and we recommend that if the views herein expressed are approved by

the Commissioners of the Land Office, the Comptroller be notified of the action taken by said Board, to the end that the item of \$11,006.08, heretofore appearing in various appropriation bills, and payable to the resident Cayugas, be disallowed by that officer and paid only upon an order of court directing such payment.

Tenth. We recommend further that if the resident Cayugas still desire to consummate their agreement with the State by reducing it to writing and procuring the same to be properly executed and approved by the Governor, immediate steps should be taken to that end.

Eleventh. If, pending the execution and approval of said agreement, the resident Cayugas and the Senecas should desire the advice and assistance of the Commissioners of the Land Office in effecting an adjustment of their differences, we recommend that the best efforts of said Commissioners be directed to the conclusion of a fair, satisfactory and final settlement of said differences.

All of which is respectfully submitted.

MERTON E. LEWIS.

JAMES L. WELLS,

FRANK M. WILLIAMS,

Committee.

STATE OF NEW YORK,

OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *March 27, 1918.*

IN RE: THE CLAIM OF THE CAYUGA NATION OF INDIANS.

To the Honorable The Commissioners of the Land Office:

Pursuant to the request of your Honorable Body, the following memorandum and suggestions are submitted with reference to the claim of the Cayuga Nation of Indians embodied in a Memorial to the Commissioners of the Land Office, bearing date February 26, 1906. The history of this claim is familiar and need not be repeated here. It is sufficient to say that the claim presented was for the sum of \$247,609.33, being the alleged profits accruing

to the State from lands purchased by the State from said nation. The theory on which such claim rests is that the Cayuga Nation of Indians, at the time of the sale of their lands to the People of the State of New York, were an inferior and dependent race, over whom the State of New York had assumed a guardianship; and that the State could not justly profit by the purchase of their lands at a nominal price and an immediate sale thereof at a much larger price.

By chapter 472 of the laws of 1907, the Commissioners of the Land Office were empowered to investigate said claim and report thereon to the Legislature with recommendations.

On the first day of April, 1908, Mr. Joseph A. Lawson, an attorney and counselor at law of the city of Albany, was duly appointed by said Board to examine into the merits and legal aspects of said claim and to report thereon in writing; and on the 21st day of April, 1908, the report of said Lawson was presented to the Commissioners of the Land Office, and upon consideration was duly adopted.

On the 26th day of April, 1909, by chapter 255 of the Laws of that year, the Legislature substantially adopted the recommendations of said report. By section 1 of said act, the Commissioners of the Land Office were empowered to adjust said claim with the Cayuga Nation of Indians by entering into an agreement with said nation resident in the State of New York, for the settlement thereof, on a basis not exceeding the amount claimed by said nation, to wit: \$247,609.33.

The Board was authorized also to allow interest on the amount of the settlement from the date of the presentation of said Memorial to the Commissioners of the Land Office, and computed to the day of settlement.

The said section contained the further provision that the amount of the settlement agreed upon should be retained in the treasury of the State as a trust fund for said Cayuga Nation and an annuity equal to the interest on the unexpended balance of said fund, at the rate of 5 per cent., should be paid annually to said nation. The expense incurred by said nation in prosecuting its claims was made a charge against the fund and payable out

of the same. Finally, the settlement was to be subject to the approval of the Governor.

It is manifest that the language of the statute authorizing the Board to adjust said claim by entering into an agreement with said nation for the settlement thereof, contemplated that the agreement, when reached, should be reduced to the form of a written contract or treaty between the People of the State of New York and said Cayuga Nation of Indians, and that the same should be executed in due form by the authorized representatives of both parties thereto.

It was further contemplated that the approval of the Governor should be endorsed upon said agreement in due form, or attached thereto, so as to make the same a part thereof, and in the absence of such approval, was not intended to have any validity whatever.

It was further contemplated that said written agreement should be so drawn as to operate as a release and satisfaction of all claims which said Cayuga Nation of Indians had against the State of New York of every name and nature.

Acting under the authority of this statute, the Commissioners of the Land Office, on the 27th day of May, 1909, appointed as a special committee to negotiate said settlement, the Speaker of the Assembly, the State Treasurer and the State Comptroller, and said committee thereafter and on or about the 19th day of June, 1909, at the city of Rochester, negotiated a settlement with the authorized representatives of said Cayuga Nation, on the basis of the face of the claim, with interest at 5 per cent. per annum from February 27, 1906, amounting to the sum of \$297,131.20. \$27,131.20 was allowed for the services and disbursements of the attorneys representing said Cayuga Nation, leaving \$270,000 as the principal of the trust fund to be set aside by the State Treasurer, as provided by the statute.

This agreement was reduced to writing as required by law and presented to Governor Hughes for his approval and on the 5th day of May, 1910, said agreement was returned to the Commissioners of the Land Office without approval, for reasons stated in a letter accompanying the same.

It is proper to add that the ground upon which the Governor withheld his approval was that, as he had been advised by the

Attorney-General, there were certain material facts bearing upon the merits of the claims to which the attention of the Commissioners of the Land Office had not been directed, and he, therefore, recommended a further hearing upon the subject.

After further investigation by the Commissioners of the Land Office, and on the 26th day of July, 1911, the claim was rejected by the Commissioners of the Land Office on the ground that the same was illegal and that the Board had no authority to allow the same.

Thereafter, mandamus proceedings were instituted in the Supreme Court to compel the Board to take further action and directing them to reach an agreement with the representatives of the Cayuga Nation of Indians. The Special Term denied the writ, but the Appellate Division in the Third Department, reversed the order of the Special Term and awarded a peremptory writ, and the order of the Appellate Division was affirmed by the Court of Appeals, where it was held, in substance, that the act directing the Board to negotiate a settlement of the Cayuga claim by entering into an agreement with said tribe was valid inasmuch as the claim of the Cayuga Nation rested upon moral grounds; and that the provision of the statute empowering the Commissioners of the Land Office to negotiate a settlement of said claim was mandatory and not directory merely. The Court held further that the Commissioners of the Land Office, by rejecting the claim altogether upon the ground of its illegality, had acted without authority; that the statute did not contemplate that the Board should pass upon the merits or legality of the claim, but that they should reach a settlement of said claim with the Cayuga Tribe; and that the powers of the Board were not exhausted, as no final settlement had been reached with the concurrence and approval of the Governor. (*People ex rel Cayuga Nation vs. Commissioners of the Land Office*, 207 N. Y. 42.)

Acting under the order of the Court, and on or about the 23d day of January, 1913, further steps to settle said claim were taken by the Commissioners of the Land Office. It was finally agreed that the face of the claim should be allowed without interest, namely: \$247,609.33.

At this point, attention is called to the fact that, by the statute,

the Commissioners of the Land Office were empowered to adjust the claim of the Cayuga Nation of Indians, resident in the State of New York; and the statute on its face does not contemplate the setting aside of any money as a trust fund in behalf of any band of the Cayugas residing outside of the State.

At the meeting of the Board the 23d day of January, 1913, as appears by the minutes of the Board, Attorney-General Carmody suggested that the Board ascertain the number of Cayugas residing in Canada and in the west, as well as in the State of New York, with a view to prorating any settlement that might be made according to population. Up to that time it seems to have been considered that any settlement made under authority of the statute should go to that part of the Cayuga Nation residing within the State of New York, and the proposition of Mr. Van Voorhis, of counsel for the Cayuga Nation, made to the Board January 23, 1913, seems to have been based upon the assumption that the whole award would go to the resident Cayugas. The learned Attorney-General, however, seems to have been impressed with the inequity of such disposition. The Indians who, after the sale of their lands in the State of New York, had voluntarily vacated the same and found a new home beyond the Mississippi river, had the same equitable claim upon the State as that portion of the tribe which refused to go west, but found a home in western New York through the hospitality of the Senecas.

On the 4th day of March, 1913, the Board, acting on this principle, reached the conclusion that inasmuch as the New York Indians were approximately double in number those of the western band, the fund should be apportioned, two-thirds to the New York Indians and one-third to the band located in the west. The sum of \$82,536.44, being one-third of the sum agreed upon, was thereupon subtracted from the whole amount, leaving the sum of \$165,072.88 to be awarded to the Cayuga Nation resident in the State of New York. The other third was to remain in the treasury to be disposed of as the Legislature might see fit. (See proceedings of the Land Board for 1913, page 51.)

While this latter provision was wholly unauthorized by the statute, it was entirely harmless in view of the fact that the repre-

sentatives of the Cayuga Nation residing in this State appear to have acquiesced in the reduction of the award to be made to them, evidently recognizing the justice of such disposition.

On the 23d day of April, 1913, the Board adopted the following resolution:

“Resolved, That the claim of the Cayuga Nation of Indians resident of the State of New York as fixed by this board at a meeting held March 4, 1913 (\$165,072.89), be allowed; and that the attorneys' fees and disbursements be fixed at \$18,215.89, to be deducted from the amount of \$165,072.89, at which the claim is settled, and that this settlement be transmitted to the Governor for his approval.”

It appears that on the following day, April 24th, the resolution was sent to the Governor. This new agreement, which was radically different in its terms from the one originally drawn up in due form and properly executed, was never reduced to writing nor executed by either of the parties thereto, nor did the Governor at that time or at any subsequent time formally approve of such final settlement.

It is manifest, therefore, that no valid and legal adjustment of the claim of the Cayuga Nation of Indians resident in the State of New York has been effected within the meaning of section 1 of the Act of 1909. If the chiefs and counsels of the Cayuga Nation of Indians resident in this State are still disposed to accept the sum of \$165,072.89 as their share of the fund originally agreed upon, and that \$18,215.89 should be deducted therefrom in satisfaction of attorneys' fees and other expenses, and if the Commissioners of the Land Office are still disposed to settle the claim on that basis, an agreement or treaty should be drawn up to that effect and properly executed by both parties.

The written instrument should then be presented to the Governor for his formal approval thereof.

Up to this point we have considered only the first section of the Act. The second section reads as follows:

“If settlement of the claim shall be reached the Commissioners of the Land Office shall be authorized thereafter to investigate and report to the Legislature, whether a lease or

purchase by the State from the Seneca Nation of Indians, resident in the State of New York, of adequate lands for the use and occupation of said Cayuga Nation, and which shall be agreeable to said Nation, can be procured by the use for such purpose of sufficient of the principal sum aforesaid."

It will at once be noticed that this provision cannot become operative until after the agreement contemplated by section 1 has been properly executed and approved by the Governor. Until those formalities are accomplished, the Commissioners of the Land Office have no jurisdiction or authority under the statute to enter upon any inquiry into the feasibility of purchasing or leasing Seneca lands as a home for the Cayugas.

It has been suggested, however, by counsel for the Seneca Nation that the Legislature, in recognizing the moral claims of the Cayuga Nation as herein set forth, did so for the purpose of providing a fund by means of which a home for the Cayugas could be secured upon the Seneca Reservation. It is claimed by the Senecas that after the sale of the remnant of the Cayuga lands, the Seneca Nation received the ancestors of the present Cayugas resident in this State as their guests and provided them a home, and that the Cayugas have ever since resided on the Seneca Reservation, maintained their tribal organization independently of the Senecas, and received governmental aid as a tribe; but that they have contributed nothing to the Seneca Nation in exchange for the use of the lands they occupy, and refuse to abandon their tribal organization and become a part of the Seneca Nation.

In this view of the situation, it may be proper to suggest that the Cayuga Nation of Indians residing in the State of New York have not acquired any vested rights in any fund proposed to be set aside for them in satisfaction of their alleged claim. The matter is still open; and while it might not be proper for the Commissioners of the Land Office, even if, in their judgment, the best interests of both tribes would be promoted thereby, to decline to consummate the agreement contemplated by the resolution above quoted, unless an agreement between the Seneca Nation and the New York Cayugas should first be reached whereby their differences should be composed and the Senecas properly compensated

for the past as well as future use of their lands, they might suggest that if, pending the consummation of said agreement, a final and friendly adjustment of all differences between the Senecas and the Cayugas should fail, it would be entirely competent for the Legislature to repeal the act of 1909 and thus leave the matter as it stood prior to the enactment of said statute.

It remains to consider the effect of subsequent legislation. By chapter 778 of the Laws of 1913, which became effective May 31st of that year, the Legislature appropriated \$38,496.74 "for the payment of the annuities due on October 23, 1913, and April 23, 1914, and for the payment of the expenses of counsel, as allowed by the Commissioners of the Land Office on account of the settlement negotiated by the Commissioners of the Land Office and approved by the Governor, pursuant to chapter 255 of the Laws of 1909 with the Cayuga Nation of Indians."

The recital that the settlement negotiated by the Commissioners of the Land Office had been "approved by the Governor pursuant to chapter 255 of the Laws of 1909" is no evidence whatever of that fact.

In *Dougherty v. Bethune*, 7 Georgia, 90, the action was brought to recover the value of bank notes issued by the Chattahoochee Railroad and Banking Company. The action was against the assignee of said banking company. In an act of the Legislature passed December 23, 1843, the assignment by said company to said defendant was, among others, recited, "which assignments," to quote the language of the act, "conform to the act of the last general assembly and are of record in the clerk's office of the Superior Court of Muscogee county, shall be taken, held and considered valid for all purposes both in law and in equity." The defendant denied the existence of any such assignment, or that such assignment appeared of record in the said clerk's office. The plaintiff claimed that he was not bound to prove that defendant was the assignee because that fact was declared in the act of 1843 and the court was bound to take judicial cognizance of said act. With reference to the legal effect of the recital in said act of said assignment, the court writing by Nisbet, J., said:

"Courts are bound to take cognizance of all public acts of the Legislature; they need not be pleaded or proved. The

act of 1843, so far as it is a law, the court was bound to know. It affirms the assignment, which it states has been made; it defines the duties of the assignee, and declares his responsibilities; it places him upon the footing of receivers under the act of 1842, and it is conclusive as to all legal rights which may exist under its provisions. But so far as it recites facts, it is not a law, and the courts are not bound to recognize it as such. The Legislature has no power to legislate the truth of facts. Whether facts upon which rights depend are true or false, is an inquiry for the courts to make under legal forms; it belongs to the judicial department of the government. By the Constitution the legislative and judicial departments are distinct. A citizen is not estopped to deny in the courts of the country, any mere fact which the Legislature may choose to recite. If he was, the government would be a despotism, and the Legislature might be a tyrant. The defendant here pleads that there never was such an assignment as is alleged in the act of 1843. He is not estopped by that act to deny the fact of assignment."

In *Emendorff v. Carmichael*, 3d of Littell, 472, 14 Am. Dec. 86, it is stated in the *per curiam* opinion that

"The facts recited in the preamble of a private statute may be evidence between the commonwealth and the applicant, or the party for whose benefit the act passed. But as between the applicant and another individual, whose rights are affected, the facts ought not to be evidence. We well know that such applications are made frequently *ex parte*. And if they are not entirely so, but the party affected appears and resists the statute, it is very questionable whether the facts recited ought to be evidence in a future contest. The Legislature, in all its inquiring forms, by committees, make no issue, and in their discretion may or may not coerce the attendance of witnesses, or the production of records, and are frequently not bound by those rules of evidence applicable to an issue properly formed, the trial of which is an exercise of judicial power. Once adopted, the principle that such facts are conclusive, or even *prima facie* evidence against private

rights, and many individual controversies may be prejudged and drawn from the functions of the judiciary into the vortex of legislative usurpation. The appropriate functions of the Legislature are to make laws to operate on the future incidents, and not the decision of, or forestalling, rights accrued or vested under previous laws. Hence such a preamble as the present ought in such a controversy to be taken to answer the purpose for which it was intended, that is, an apology for the passage of the act, and the reason why the Legislature so acted. Such a preamble is evidence that the facts were so represented to the Legislature, and not that they are really true."

And in *May v. Frazee*, 4 Littell, 391, the last paragraph of the headnote reads as follows:

"Facts stated in a private statute are strong evidence against those who procured its passage."

And, in the course of his opinion in that case, Judge Mills says:

"It is true it is decided by this court in the case of *Elmendorff v. Carmichael*, 3d of Littell, 472, that the recital in a private act of assembly cannot be evidence against strangers or conclude their rights, still if admissions were ever made against the parties procuring the passage of the act, such admissions ought to be heard against them on the principle that their writings and sayings may be used as evidence against them and not for them. The recitals in such an act, as said in the case before cited, was evidence that facts were so represented to the Legislature by the petitioners that Craig and Thomas procured its passage and that they placed the facts as stated on the legislative records."

In the matter under consideration, if the recital to the effect that the alleged settlement had been approved by the Governor were to have any effect as evidence of that fact, it would be to give to self-serving declarations the force of evidence, and this, of course, cannot be done.

By the resolution of April 23, 1913, the Commissioners of the Land Office agreed to allow to the resident Cayugas two-thirds of

the face of their claim; that is, two-thirds of \$247,609.23, or \$165,072.88, leaving for the western band the remaining one-third namely, \$82,536.45. The Board allowed to counsel for the resident Cayugas \$18,215.89, leaving as the basis for the proposed annuity the sum of \$146,857, which, at 5 per cent, per annum would amount to \$7,342.85. The board also allowed to counsel for the western band for services and expenses \$9,271.78, leaving as the basis for annuities payable to the western band the sum of \$73,264.67, which, at 5 per cent., would yield an annuity of \$3,663.23.

The act of May 31, 1913, was doubtless intended to cover the two items of counsel fees above mentioned, and the annual interest payments payable to the resident Cayugas and to the western band for one year.

The statement would stand as follows:

Fees of counsel for resident Cayugas.....	\$18,215 89
Interest on \$146,857 at 5 per cent.....	7,342 85
Fees of counsel for the western band.....	9,271 78
Interest on \$73,264.67 at 5 per cent.....	3,663 23
	<hr/>
	\$38,493 75

The amount of the appropriation was \$38,496.74, or \$2.99 in excess of the foregoing items. The discrepancy was probably due to an error in computation.

The statute recites that the appropriation, or so much thereof as might be necessary, was to be used to pay these particular items. The interest was to be computed from April 23, 1913, that being the date on which the resolution of the Land Board was adopted. The legislative enactment of 1913 assumed that a valid settlement had been effected by the Land Board with the Cayuga Nation, and recited that the settlement so made had been approved by the Governor. It would be fair to assume that the act was drafted by the parties who were to be benefited by the appropriation, and the law makers were justified in assuming that the facts recited therein were true, but as already appears, the later agreement, if one was finally reached, was never reduced to writing and signed by the parties, nor, as far

as known, did the Governor ever approve the settlement foreshadowed by the resolution of April 23, 1913.

It has been suggested that the Governor, by signing the appropriation bill of May 31, 1913, approved the settlement agreed upon and thereby cured any defect therein resulting from failure to procure its formal approval by the Governor; but this suggestion cannot be adopted. The act of May 31st, by reciting that the settlement had been approved by the Governor, shows that the Legislature regarded the Governor's approval as indispensable to a valid settlement. Said act does not purport to cure defects in the attempted settlement, but simply appropriates money to be used in furtherance of a settlement assumed to be valid. It was the manifest purpose of the Legislature that the Land Board should negotiate a settlement with the resident Cayugas by agreeing with them on a sum to be accepted in full satisfaction of their claim; and also by agreeing with them on a sum to be deducted from the gross amount of the settlement and paid to counsel on account of services and disbursements in effecting the settlement; but no part of the agreement was to become binding and operative without the approval of the Governor. The agreement, when reduced to writing, and properly executed, was to be submitted to the Governor for his approval, both as to the form and sufficiency of the instrument and the subject matter thereof.

The act of May 31, 1913, does not purport to repeal or modify the act of 1909, nor to waive compliance with any one of its provisions. By approving the act of 1913, the Governor simply approved the setting aside of a specified sum to be used for the purposes, and under the limitations therein provided.

In *Cox v. The Mayor &c of N. Y.*, 103 N. Y. 519, it was held that "a legislative ratification of what was previously unlawful should be found in plain language and not left to uncertain implication and doubtful inferences." In that case it appeared that the common council of the City of New York had unlawfully increased the salaries of police justices from \$5,000 to \$10,000 per annum. The plaintiff in said action had received the unlawful salary from January 1, 1870, to August 31, 1871. After the discovery of the alleged illegality, he was paid at the rate of \$5,000 per annum which, as the Court of Appeals afterwards held, was

the legal salary of his office. He was paid at this rate up to November 3, 1873, when he was legislated out of office. He had accepted the reduced payments under protest; and the action was brought to recover the remainder computed on the basis of \$10,000 per annum. A detailed statement of the estimated expenses of the city for the ensuing year was submitted to the Legislature prior to the first Tuesday of March, 1870; and by chapter 383 of the laws of that year, the Legislature appropriated the sum required to cover the various items specified in said statement, including the salaries of police justices at the rate of \$10,000 per year. It was claimed by plaintiff that the appropriation of money sufficient to pay his salary at the illegal rate of \$10,000 per annum, amounted to a ratification by the Legislature of the action of the common council in illegally raising his salary from \$5,000 to \$10,000. Judge Earl, in writing the opinion of the court said:

“ We cannot assent to this claim. It is a rule of construction that the legislature is presumed to have knowledge of the facts directly involved in its acts. But it would be quite absurd to presume that it had knowledge of all the collateral and remote facts involved, or that it contemplated all the consequences to flow directly or indirectly from its legislation. * * * There can be no presumption that the legislature knew when they passed the act referred to that there had been an attempted unlawful increase in the salary of police justices, or that it knew what salary was in fact paid or payable to them.”

This language is used notwithstanding the fact that the appropriation bill, above referred to, contained specific items for the salaries of police justices at the rate of \$10,000 per annum. At page 526, Judge Earl continued:

“ It cannot be presumed that the legislature had knowledge of all the facts upon which the city authorities based the estimates consisting of hundreds and probably thousands of items submitted to it. It knew that those authorities had made their estimates of the money to be raised, but it did not authorize the money when raised to be paid out for unlawful purposes. It authorized a gross sum to be raised for city

courts, but when raised that sum was to be paid out not otherwise than according to law. In authorizing that amount to be raised, there is no reason for saying that it meant to change or increase salaries, or to ratify any illegal action of the city officers. Sound policy requires that legislative ratification of what was previously unlawful should be found in plain language, and not left to uncertain implication and doubtful inferences resting upon slender foundations."

Applying these principles to the matter in hand, the Legislature, by appropriating a lump sum covering the various items mentioned in the resolution of the Commissioners of the Land Office did not intend to waive any requirement of the act of 1909, nor to authorize the payment of the money appropriated except in strict conformity of the statute which authorized the settlement.

This view is supported by the further provision of the act of 1913 that the annuities are to be paid "upon the audit and warrant of the Comptroller to the proper authorities of the bands of said Nation, or their duly authorized agents, and the amount of the expenses of said Cayuga Nation for counsel fees and expenses as allowed in said settlement to be paid upon the audit and warrant of the Comptroller to the attorneys for the respective bands of said Nation."

The mere appropriation of money does not relieve the Comptroller of responsibility for inquiry into the legality of the claims for which the money is appropriated. As was said by Chief Judge Parker in *People ex rel. Grannis vs. Roberts*, 163 N. Y. 70, at page 74:

"Two facts must exist before any of the funds of the state can be paid out, first, an appropriation by the legislature and, second, an audit by such authority as the legislature may create for the purpose."

On page 78, the same learned Jurist said:

"The auditing of an account by the comptroller involves a judicial function. He is required in the language of the books 'to hear, to examine, to pass upon, to settle and adjust,'"

If the appropriation of a lump sum, covering the various items recited in the resolution of the Land Board, is to be considered as a legislative command to pay to the various claimants the various sums specified in said resolution without reference to the requirements of the act of 1909, there is nothing left for the Comptroller to do but to issue his warrants and take the proper receipts. His functions in this particular matter, in such view of the statute, would be purely ministerial and in no sense judicial.

In each of the years since 1913, the appropriation bill has contained an item of \$13,306.08 payable as an annuity to the Cayuga Nation of Indians. This sum is made up of two items; namely, \$2,300, which was the amount of the annuity payable prior to 1913, and \$11,006.08, which sum is five per cent on the sum allowed to said tribe by action of the Board taken April 23, 1913, as above stated.

It appears that all of the money so appropriated has been paid out upon the Comptroller's warrants, although there is no written agreement on file in his office, nor in any other State office purporting to embody the settlement contemplated by the act of 1909; nor is there any evidence on file in any state office that the Governor, at the time, or at any subsequent time, approved the so-called settlement embodied in the resolution of April 23, 1913. The Comptroller should be advised, therefore, to disallow the sum of \$11,006.08 if the same shall appear as part of said annuity in any future appropriation bill unless the Legislature shall, by unmistakable language, direct its payment.

MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *April* 24, 1918.

BEFORE THE STANDING COMMITTEE ON THE
HEARING OF REMONSTRANCES OF THE COMMISSIONERS OF THE LAND OFFICE.

In the Matter of the Application of the RED STAR TOWING AND
TRANSPORTATION COMPANY for a grant of land under the
waters of Powell's Cove, Queens County.

To the Commissioners of the Land Office:

GENTLEMEN.—This application was filed on December 14, 1917. A remonstrance was filed by the Malba Estates Corporation. Hearings were had before the Standing Committee on February 5 and February 19, 1918.

The applicant is engaged in a general towing and transportation business and requests the grant for the purpose of erecting thereon, docks or buildings, bulkheads, piers, dry-docks and a marine railroad and filling in and dredging parts of the same; all for the purpose of building and repairing vessels.

The Malba Estates Corporation own the property directly across the Cove from the location of the lands applied for. The distance from the exterior line of the lands applied for to the shore line on the opposite side of the cove, being the shore line of the property owned by the Malba Estates Corporation, is approximately a distance of from twelve to eighteen hundred feet. The property of the remonstrant is a high class residential development known as Malba.

It would appear to your committee that a grant to this applicant of the lands now applied for, for the purposes above mentioned, would be detrimental to the interests of the property owners on the opposite side of the cove, and we would therefore

recommend the denial of this application as in the proper exercise of your discretion.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

JAMES L. WELLS,

Treasurer.

FRANK M. WILLIAMS,

State Engineer and Surveyor.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, May 23, 1918.

BEFORE THE STANDING COMMITTEE ON THE
HEARING OF REMONSTRANCES OF THE COMMISSIONERS OF THE LAND OFFICE.

In the Matter of the Application of SALVATORE OLIVA AND CONCETTA OLIVA for a grant of land under the waters of an arm of the Byram River at Port Chester, Westchester County, N. Y., for purposes of beneficial enjoyment.

To the Commissioners of the Land Office:

GENTLEMEN.— This is an application for a parcel containing 0.1169 acre of land formerly under water of an arm of the Byram river but which has been filled in for several years and upon which buildings have been erected by a grantor of the applicants which buildings are now occupied by said applicants. A remonstrance was filed by the town of Rye upon the ground that the town of Rye is the owner of said lands formerly under water by virtue of a Colonial Patent made in the year 1720 to Daniel Purdy, and others, inhabitants and freeholders of the town of Rye. Your committee heard this contested matter on February 19, 1918. The applicant and the remonstrant were represented by counsel.

After due deliberation your committee have reached the conclusion and advise your Honorable Board that the remonstrance of the town of Rye should be overruled. It appears that many grants have been made by the Land Board of land similarly situated in the village of Port Chester. We recommend, however, in view of the protest of the town of Rye, that in making a grant to the applicant the same be by quit claim patent only containing a provision that "these presents shall in no wise operate as a warranty of title," and that said letters patent contain also the following clause:

"This grant is accepted by the patentee as conveying only such right therein as the state now has, and said patentee, by the acceptance hereof expressly waives any right to a refund in case of the failure of the state's title."

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

JAMES L. WELLS,

Treasurer.

STATE OF NEW YORK,

OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, May 23, 1918.

Before the Commissioners of the Land Office. In the Matter of the Petition of ALMA M. NAGEL for the release of premises known as 231 West 28th Street, Borough of Manhattan, and 1367 Hancock street, Borough of Brooklyn, New York, which escheated to the State on the death of her husband, JOHN H. W. NAGEL, without heirs.

To the Commissioners of the Land Office:

GENTLEMEN.—The petition herein and corroborative proofs and affidavits show that John H. W. Nagel, a naturalized citizen of the United States who was admitted to citizenship in New York city on October 11, 1876, died in the Borough of Brooklyn on March 27, 1918, leaving his widow, the petitioner, and no

heirs at law. He died seized of two lots of land described in the petition, one of them being known as No. 221 West 28th Street, Borough of Manhattan, having a six-story brick building thereon of the appraised valuation of \$29,000 for both lot and building which is subject to a mortgage for \$18,000 and certain taxes, water rents and assessments amounting to about \$1,000, and also subject to the petitioner's right of dower therein. The said decedent also died seized of premises known as 1367 Hancock street, Brooklyn, fully described in the petition where the petitioner now resides said to be of the value of \$6,400 subject to a mortgage upon which \$4,000 is due and certain taxes and assessments and also subject to the petitioner's right of dower. The said decedent left no other real estate. The petitioner and the decedent were married in New York city on April 20, 1915, and lived together as man and wife up to the time of decedent's death as above stated. It is alleged that the decedent had often expressed his intention to make a will devising his property to his wife and that such intention was frustrated by his sudden death caused by cerebral apoplexy. Notice of this application was duly published in newspapers and printed in New York and Kings counties and copies thereof were duly posted on the Court House doors of Kings and New York counties.

I hereby certify that this application is made in accordance with the statutes and in accordance with the rules and regulations of the Commissioners of the Land Office and in view of the provisions of the Public Lands Law requiring in case the Commissioners shall determine to make the release that the same be made without consideration to a widow of a person whose estate escheated, I would recommend action accordingly.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *June 17, 1918.*

Before the Commissioners of the Land Office. In the Matter of the Application of FRANK BREWER for Letters Patent to Lot No. 12, Cowasselon Tract, Madison County.

To the Commissioners of the Land Office:

GENTLEMEN.—The petition of Frank Brewer, with accompanying papers together with the records of the State Comptroller's office, show that Lot 12, Cowasselon Tract, containing 142.6 acres, was sold by the Surveyor General on December 27, 1817 to Sylvester Pettibone and that Elisha Hills having subsequently purchased by assignment fifty acres in the south part of Lot 12, a new account was opened with said Hills by the State Comptroller pursuant to statute on March 16, 1821 for a proportionate part of Pettibone's bond for part payment of said lot. Elisha Hills having died prior to February 10, 1829, Chauncey C. Cook assigned to John Curry claim of his wife Esther E. Cook, one of the children and heirs at law and devisees of Elisha Hill. The said new account was duly signed by various mean assignments to William Clement by assignment dated April 24, 1872. Said William Clement died intestate in Madison county on or about December 21, 1874, leaving him surviving his widow, who died November 27, 1916, and numerous heirs at law. By reason of a defect in the chain of the aforesaid assignment it was deemed advisable for the heirs of William Clement to commence a partition action for the purpose of finally determining the rights of all parties in and to the fifty acre tract. Such an action was brought by Jennie Clement Brewer against Ellen C. Smith, The People of the State of New York, and the heirs at law if any of said Elisha Hills, deceased, which resulted in an interlocutory judgment of the Supreme Court, Madison county, on December 19, 1917, establishing the rights of the various parties to the action and decreeing a sale of said fifty acre lot by H. W. Coley, referee. A final judgment was entered on April 11, 1918, upon the confirmation of the report of Referee

Coley showing that he had sold said land to Frank Brewer, the applicant herein, subject to the lien of the State of New York upon the express terms and conditions that said purchaser comply with the rules and regulations of the Land Board of the State of New York upon his application for a patent for said lands, he having paid the purchase price thereof to said referee. The said referee, on February 21, 1918, executed a deed to the applicant herein for said land. In accordance with said judgment of the court the applicant now presents, in addition to the original certificate of new account that said assignments which were exhibits before the Supreme Court in said action of Brewer against Clement, also the receipt of the State Treasurer for \$204.42 in full payment of new account of Elisha Hills for fifty acres, the south part of lot 12. This receipt is dated May 3, 1918.

I have examined the papers in this application and am of the opinion that, pursuant to the order of the Supreme Court, Frank Brewer, the applicant and purchaser under the partition action is now entitled to receive letters patent for the following described land:

All that tract or parcel of land situate in the town of Lincoln, County of Madison, being part of Lot No. 12, described as follows: Beginning at the southeast corner of said lot number 12 of the Cowasselon Creek tract, thence westerly twenty-nine chains, eighty-eight links to the southwest corner of said lot, thence northerly on the west line of said lot sixteen chains, seventy-four links, thence easterly twenty-nine chains eighty-eight links to the east line of said lot, thence southerly on the east line of said lot sixteen chains seventy-four links to the place of beginning, containing fifty acres of land.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *June 26, 1918.*

To the Commissioners of the Land Office:

In my report to the Land Board at its meeting held November 21, 1917, I recommended that a plot of land 50 by 100 feet vacant property, fronting on the west side of Shephard avenue in the city of Brooklyn, beginning 330 feet north of Blake avenue referred to in the application of James M. Holland for advertisement and sale as unappropriated state lands, be referred for appraisal. At a subsequent meeting of the Land Board, held January 24, 1918, the premises on the westerly side of Shephard avenue, which were described as lots 28 and 29, were ordered sold subject to all taxes and liens against the lot at not less than \$50 per lot plus expenses of sale. The State Engineer advertised and sold these lots as lots 28 and 30 in block 28 East New York to Benjamin Traktman, the highest bidder.

It now appears that the lands referred to in the application of James M. Holland, and also in my report to the Land Board of November 1917, were lots 26 and 28. The State Engineer, however, sold separately lots 28 and 30, and Benjamin Traktman now presents State Engineer's certificates for the sale of lots 28 and 30, together with State Treasurer's receipt in full payment. I would, therefore, recommend that letters patent issue to Benjamin Traktman for lot 28. But inasmuch as lot 30 was erroneously sold without directions from the Commissioners of the Land Office, I recommend that the sale of this lot 30 be cancelled, and that lot 26 of block 28 East New York be advertised and sold by the State Engineer at public auction upon the terms referred to in the resolution of the Land Board of January 24, 1918.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,ALBANY, *July 9, 1918.*

Before the Commissioners of the Land Office. In the Matter of the Application of JOHN A. DONO, for the release of certain lands at Elmhurst, Queens County, which escheated to the State upon the death of his wife, ELIZABETH DONO.

To the Commissioners of the Land Office:

GENTLEMEN.—The petition of John A. Dono, residing at 40 East 50th street, New York city, shows that he is the husband of Elizabeth Dono, who died January 15, 1918, seized of lots 208, 209, 210 and 211, on a map entitled "New Elmhurst," belonging to Morganthaler & Pfeffer, situate in the Second ward borough of Queens, made by Homer L. Bartlett, city surveyor, November 24, 1909; that on January 25, 1915, the said Elizabeth Dono, under her maiden name of Elizabeth Cooper, purchased the said property by deed from Morganthaler & Pfeffer Realty Company, which deed was duly recorded in Queens county clerk's office, for the sum of \$2,800, and that the petitioner made payments from his own funds thereon, amounting to \$440, and has paid taxes of upwards of \$100 on said premises. The petitioner married Elizabeth Cooper in the city of New York on April 28, 1915, and they lived together as man and wife up to the time of her death as before stated.

Said Elizabeth Dono left no other real estate and no personal property except a savings bank account amounting to \$1,257.42. She left certain debts and obligations which the petitioner has paid, and he has also paid her funeral expenses, which debts and funeral expenses amount to upwards of \$600. Elizabeth Dono left her surviving no heirs at law.

Notice of this application has been duly advertised and the present value of the real estate sought to be released is stated to be \$2,800.

Pursuant to the provisions of the Public Lands Law, if Your Honorable Board see fit to grant the prayer of this petition, they

should do so without requiring any consideration from the husband of the person at whose death the lands escheated.

Respectfully submitted,

MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *September 24, 1918.*

To the Commissioners of the Land Office:

GENTLEMEN.—It has been reported to me by the law firm of Watts, Stockwell & Hunt, of Niagara Falls, that a house and lot known as No. 195 Olcott street, Lockport, N. Y. probably escheated to the State upon the death of Robert Hackney, of Lockport, about the early part of 1915 because of the failure of heirs. Mr. Hackney left, however, a widow who remained in possession of said property until her death on September 15, 1915. Mrs. Hackney left sisters, a brother and nieces, but her dower interest in the property expired at her death. The Niagara Falls attorneys state that the property is and has remained idle since Mrs. Hackney's death, and is now in very bad condition; that the plaster in the house is falling down, and grass and weeds have grown several feet high; and that they have a client who desires to rent said property until the same can be sold by the State.

I would therefore recommend that this matter be referred by your Honorable Board to this department, with power to lease and make necessary repairs if the same be deemed advisable.

Very truly yours,
MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,

OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *October 10, 1918.*

To the Commissioners of the Land Office:

GENTLEMEN.—The within application of W. R. Grace & Co., for a confirmatory grant is hereby approved, it appearing that the grant to them on February 11, 1918, described lands under water situated in the county of New York which lands so granted are claimed by the local authorities of New York and Kings county to be located in Kings county, although the question is one not free from doubt. However, it is undisputed that the applicant's uplands are wholly within the borough of Brooklyn, Kings county. I would, therefore, recommend upon payment of five dollars patent fee that new letters patent issue to W. R. Grace & Co., correcting the description therein to read:

“All that certain piece or parcel of land under water situated in the city of New York, adjacent to and in front of uplands situated in the Borough of Brooklyn, County of Kings owned by said W. R. Grace & Co.,”

and also in detail as to metes and bounds as in the aforesaid letters patent, and that the patent so corrected be confirmed as of the date of the original patent, viz., February 11, 1918.

Very truly yours,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,

OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, November 14, 1918.

Before the Commissioners of the Land Office. In the Matter of the Application of MICHAEL TRACY and JOHN TRACY for a grant of lands under waters of ARTHUR KILL at Tottenville, Staten Island, for the purposes of beneficent enjoyment.

To the Commissioners of the Land Office:

I return the above entitled application with accompanying papers without my approval for the following reasons:

First. That the State Engineer and Surveyor's map shows as apparently owned by the applicants a parcel of land marked "Grant to Rinalder Fisher, December 22, 1881 — area, 70,000 square feet," being a parcel of land apparently still under water extending from high water line 700 feet out into the kill. By an examination of the records of the Commissioners of the Land Office, it appears that the grant to Rinalder Fisher was made only out to the pier and bulkhead line as it then existed and the exterior line of said grant was bounded by said pier and bulkhead line. An error was made by the local surveyor in the length of the northerly and southerly lines of said grant from the high water line to the pier and bulkhead line, so that the length as given of those lines as described in the grant, to wit: 700.06 feet was incorrect as the distance from the high water line to the pier and bulkhead line was only about 600 feet and the official water grant map prepared by the State Engineer and Surveyor has been corrected accordingly.

It is my opinion that the exact location of the pier and bulkhead line should govern in a construction of the limits of said grant rather than the distance therein mentioned for the reason (first) that the pier and bulkhead line is therein mentioned to be the exterior line of the grant, and (second) the Land Board had no power to make a grant outside of the pier and bulkhead line established by law.

As the applicant now applies for lands under water beginning at a point in front of the Rinalder Fisher grant, 700 feet westerly

from high water line, it is apparent that a portion of the lands now applied for in front thereof do not adjoin the lands of the applicant, but that a plot of ungranted land, about 100 feet square, still remains ungranted and unsought for by the applicant. Therefore the Land Board is without power to make a grant to these applicants of the land in front of the Fisher grant unless the applicants also apply for said plot of about 100 feet square outside of the old pier and bulkhead line. This will require correction of notice of application and a new advertisement.

Second. No proof has been offered that the applicant is the owner of the land under water which was granted to Rinalder Fisher nor to another parcel of land under water lying southerly thereof, which was granted to Alfred H. Sprague on August 18, 1880, both of which grants are excepted from lands now applied for. Chapter 898 of the Laws of 1895, establishing pier and bulkhead lines around Staten Island, provides that "no such grant shall be made by the Commissioner of the Land Office, except to the owners of the adjacent upland where no previous water grant has been made and to the owner of the land under water within the water line established before the passage of this act where such water grant has been made." It will, therefore, be necessary as above stated that proof be furnished of the ownership by the applicants of the lands under water formerly granted to Fisher and Sprague.

Third. The rules of the Land Board have not been fully complied with in that there is no affidavit of disinterested freeholders appraising the value of the lands under water applied for, and no offer to pay a sum of money is made by the applicants for such grant.

Your attention is further called to a communication to your Honorable Board from the corporation counsel of the city of New York, under date of November 2, 1918, in which he states as follows:

"In connection with this application I have received from the office of the president of the borough of Richmond a communication dated October 17, 1918, in which he states that the lands applied for include the land within the lines of a public street, intersecting the high water line of Arthur

Kill, known as Fisher avenue; that a public sewer is constructed through said Fisher avenue, discharging into the Arthur Kill at the foot thereof; and that there is a natural watercourse (not shown on the maps accompanying the application) running from the northerly line of the Staten Island Rapid Transit Railway to the Arthur Kill, which receives surface drainage.

The city of New York makes no claim of title to any of the lands under water applied for, except so much thereof as is included within the prolonged lines of Fisher avenue, which became vested in the city by virtue of section 83 of the charter, and it does not appear that a grant of the remainder of said lands would be prejudicial to the interests of the city provided certain conditions are inserted in any letters patent which may be issued on said application.

I request, therefore, that, in any letters patent which may be issued on said application:

I. There be excepted out of the lands granted the land lying between the prolonged lines of Fisher avenue, from the high water line of Arthur Kill to the pier head line.

II. That there be reserved a perpetual easement to the city of New York for the maintenance of the sewer now constructed through said Fisher avenue.

III. That there be inserted the covenants, terms and conditions directed to be included, in grants of lands under water within the territory of the city of New York by resolution adopted by your Honorable Board on May 28, 1903.

I further request, that any such letters patent be made subject to:

First. The dedication of a strip of land forty-five feet in width through the land of the applicants parallel with and adjoining the westerly boundary of their property from Arthur Kill Road to the pierhead line, for street uses.

Second. An easement in favor of the city of New York in and over a strip of land along and adjoining the northerly boundary of the Staten Island Railway Company's right of way from the existing water course in the applicants' land

westerly to the forty-five foot street heretofore referred to. Said easement to become void when future drainage improvements in that locality make its use unnecessary.

I am advised by the borough president in his said communication that the acquirement of the forty-five foot street with the above grants of easement will offset any rights or privileges relinquished by the city through the closing of the northerly end of Fisher avenue, and filling in the water course from the railroad right of way to Arthur Kill.

Furthermore, your attention is also called to the fact that the water grants heretofore made to Rinalder Fisher and Alfred H. Sprague contained the following exceptions:

“ Excepting and reserving to all and every the said people, the full and free right, liberty and privilege of entering upon and using all and every part of the above described premises in as ample a manner as they might have done had this power and authority not been given, until the same shall have been actually appropriated and applied to the purposes of commerce by erecting a dock or docks thereon or by the beneficent enjoyment of the same by the adjacent owners.”

It will be observed that these patents did not contain conditions to be complied with within fixed periods of time after the issue of such patents, and were, therefore, not such patents as were included in chapter 308, Laws of 1917, requiring the Attorney-General to bring actions for the annulment of such upon the ground of non-fulfillment of conditions within fixed periods. Nevertheless, in view of the reserved rights to the State under these grants, and also in view of the fact that the State engineer's map shows that no improvements have been made upon either of these two grants to Fisher and Sprague, your Honorable Board may well consider the inadvisability of making grants of lands in front of these two grants out to the new pier and bulkhead line.

Respectfully submitted,

MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, November 20, 1918.

Before the Commissioners of the Land Office. In the Matter of the application of SUSIE H. MITCHELL for the release of lands escheated to the State.

To the Commissioners of the Land Office:

GENTLEMEN.—The petition herein with corroborative affidavits and abstract of title, shows that the petitioner is the widow of Henry H. Mitchell who died on or about December 20th, 1907, being the record owner and seized of three building lots in Elmsford, Town of Greenburgh, Westchester County, described in the petition. Two of these lots were purchased by Henry H. Mitchell in the year 1893 and the other lot in the year 1905, the latter of which was mortgaged by Henry H. Mitchell and wife, Susie H. Mitchell, for \$900.00 to the Home Savings Bank at White Plains, N. Y. Said Henry H. Mitchell died intestate leaving no heirs-at-law. He was a waif, born out of wedlock and had neither father nor mother whom he ever knew and no brothers or sisters or other known relatives. He was a colored man, forty-two years of age at death. His original marriage certificate to the petitioner, dated May 5, 1891, was produced to me. The petitioner and said Henry H. Mitchell continued to live together from their marriage until the date of his death. The petitioner is suffering from a stroke of apoplexy and probably will not live a great time. The petitioner alleges that all of the money used in the purchase of said property and in improving the same by buildings was furnished by herself and that the deeds were erroneously taken in the name of her husband; that said property rightfully belongs to her and never in reality was the property of her husband. Petitioner alleges that she has paid off, out of her own money, the sum of \$300.00 upon the \$900.00 mortgage above referred to and that prior to the death of her husband, she paid the taxes upon said property and has ever since paid such taxes. She further alleges that the reasonable value of two of the lots is of the aggregate of \$2,200 and that the reasonable value of the other lot is

\$400, and that all of the said property is in the possession of the petitioner.

Pursuant to the provisions of the Public Lands Law, should your honorable Board see fit to grant the prayer of this petition by the widow, the same should be made without consideration.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

STATE OF NEW YORK,

OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *December 3, 1918.*

Before the Commissioners of the Land Office of the State of New York. In the Matter of the Application of the DELAWARE AND HUDSON COMPANY and FORT WILLIAM HENRY HOTEL COMPANY for a grant of land under the water of Lake George, County of Warren, for the purpose of beneficial enjoyment.

OPINION

By the Attorney-General on the question of the true construction and meaning of section seven of article seven of the Constitution of the State of New York, with especial reference to the power of the Commissioners of the Land Office to sell the lands of the State under the waters of Lake George.

To the Commissioners of the Land Office appointed to investigate and report on the power of the Board to grant the application of the petitioners above named, and to convey the lands under the navigable waters of Lake George, more particularly in said petition described.

You have referred to me the question above stated and I have the honor to report that I have given the matter the careful consideration which its great importance demands, and submit to you the following memorandum:

It is claimed by the parties who appeared in opposition to

this application that the lands sought to be acquired by the petitioners are part of the Forest Preserve and that the sale thereof is prohibited by section seven of article seven of the State Constitution.

I have been favored with a copy of the brief submitted by the learned counsel for the petitioners which seems to proceed upon the assumption that the lands sought to be acquired by the petitioners are technically within the Forest Preserve as that term is defined by section seven of chapter two hundred and eighty-three of the Laws of 1885, as amended, if that section is to be construed according to the plain language employed by the Legislature; but that as the evident purpose of creating the Forest Preserve and forbidding the sale of the lands and of the timber standing and growing thereon was to protect from destruction the wild forests which hold back the head waters of the Hudson, Mohawk and Black rivers, and as the lands under the navigable waters of Lake George do not in any manner contribute to this purpose, the Legislature could not have intended to include such lands in its definition of the Forest Preserve. In other words, these lands, while strictly a part of the Forest Preserve, as that term is defined by the Legislature, must not be so regarded because their inclusion therein does not appear to be necessary to the main Legislative purpose in creating the Forest Preserve.

This argument is quite persuasive, and has the sanction of two opinions written by eminent jurists in dealing with the power of the Legislature to sell land under the navigable waters of the St. Lawrence river. Both opinions were written in the case of Long Sault Development Co. v. Kennedy. Presiding Justice Smith, sitting in the Appellate Division for the Third Department, wrote the prevailing opinion for that Court, reported in 158 App. Div. 398; and Judge Collin of the Court of Appeals wrote a dissenting opinion in the same case, reported in 212 N. Y. 1.

But the Long Sault Development Company case is not decisive of the question now under consideration; for, as Counsel for petitioners concedes, both of these opinions, to the extent that they deal with the question of the power of the Land Board

to sell land under navigable water in the Forest Preserve counties are *obiter*; and the question seems never to have been judicially determined by any of our courts.

While it seems clear that the Legislature did not intend to include land located under navigable water in the Forest Preserve counties, as part of the Forest Preserve, nor to prohibit the sale of such lands by the Commissioners of the Land Office, it may be helpful to supplement the reasoning by which that conclusion has been reached by the eminent judges above referred to, and to examine the question *de novo* in the light of the language adopted by the Legislature, and if found ambiguous, to construe the same in accordance with the principles of interpretation properly applicable thereto.

At the outset it should be observed that the Forest Preserve was created and defined by the Legislature and not by the People of the State when they adopted the Constitution which became effective January 1, 1895. The Forest Preserve was created and the character of lands which should constitute the same was defined by the Legislature in 1885. By chapter 283 of the Laws of that year, the Legislature created the Forest Commission. One of the purposes of the act as expressed in its title was "the preservation of the forests." The act provided for the appointment by the Governor of three Commissioners to serve without pay, whose duties and powers were therein defined.

By section seven of the act it was provided:

"All the lands now owned or which may hereafter be acquired by the State of New York within the counties of Clinton, excepting the towns of Altona and Dannemora, Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Saratoga, St. Lawrence, Warren, Washington, Greene, Ulster and Sullivan shall constitute and be known as the forest preserve."

The next section provided as follows:

"§ 8. The lands now or hereafter constituting the forest preserve shall be forever kept as wild forest lands. They shall not be sold nor shall they be leased or taken by any person or corporation, public or private."

It will be noted that by section seven the Forest Preserve is defined as being "all the lands now owned or which may hereafter be acquired by the State of New York" within the designated counties, and this definition is immediately followed by the mandate of the Legislature that the lands at that time or thereafter constituting the Forest Preserve should be forever kept as wild forest lands. This does not mean, of course, that all of the lands in the Forest Preserve are, as matter of fact, wild forest lands, but that they shall all be kept as wild forest lands. Nor can it be inferred from the language used that those parts of the Forest Preserve which are not strictly wild forest lands may be sold.

In support of the view that lands under navigable waters in the Forest Preserve counties were not intended by the Legislature to constitute part of the Forest Preserve, it seems clear:

First. That the language of section seven of the act of 1885, above quoted, is conclusive in support of such view.

The first question is, do the words "all the lands now owned or which may hereafter be acquired" admit of construction, or are they so plain and unambiguous that they speak for themselves? In *Matter of Meyer*, 209 N. Y. 386, at p. 389, Judge Collin, writing the opinion of the Court, lays down the rule upon this subject as follows:

"It is true that the language of the statute thus declares and seems too plain to call for judicial construction, if we look to that alone. It is a familiar rule that it is not the province of the courts to supervise or revise legislation and a law plain and certain in its meaning declares itself and is insusceptible of interpretation. It is as binding upon a court as upon every citizen. There must be some uncertainty of sense, else the natural and ordinary meaning of its words must prevail."

And Judge Gray, writing for the Court in *People v. Rathbone*, 145 N. Y. 434, took the same view. He was construing section five of article thirteen of the State Constitution which prohibits a "public officer or a person elected or appointed to a public office under the laws of this state" from receiving "any

free pass, free transportation, or franking privilege * * * from any person or corporation." For violating this provision the officer could be removed from office. Rathbone, a notary public of Albany county, received a pass from the New York Central Railroad Company and the action was brought to have defendant's office adjudged forfeited on that account. The sole question was whether defendant was a public officer *within the meaning of the constitution*. It was held that a notary public was a public officer. It was said, however, that the reason for so sweeping a provision was not apparent. Upon this point, Judge Gray said:

"I concede the difficulty, indeed the impossibility, of seeing any reason why a notary public should be prohibited from accepting any privileges or favors from corporations. On its face the proposition seems absurd and it is not easy to see the wisdom, or necessity, of incorporating in our Constitution a prohibition, so unnecessarily comprehensive in its terms; when it would have been possible to specify the public officers who were probably aimed at. But it is plainly to be read there and for the very reason that it was possible to designate the public officers, who should be restrained from accepting the favors of corporations, we are, perhaps, the less able to disregard it. In the construction of constitutional provisions, the language used, if plain and precise, should be given its full effect and we are not concerned with the wisdom of their insertion. As adopted by the People the intent is to be ascertained, *not from speculating upon the subject; but from the words in which the will of the People has been expressed.*"

He said further:

"The latitude allowed in the construction of legislative acts is out of place, and would be unwise, when interpreting the fundamental law. Legislation aims at arranging the mechanism of the state for the benefit of its members and the question of intention, necessarily, is often of great importance and must be open to judicial inquiry; but the Constitution, which underlies and sustains the social struc-

ture of the state, must be beyond being shaken, or affected, by unnecessary construction, or by the refinements of legal reasoning. We may be compelled to have resort to such in the presence of contradictions, or of meaningless clauses; but not otherwise."

See also *People ex rel. Balcom v. Mosher*, 163 N. Y. 32, 36.

As far as appears, these salutary rules of constitutional interpretation have never been questioned in this State; and if lands under navigable water, owned by the State when the present Constitution was adopted, were not intended to form a part of the Forest Preserve, some better reason for their exclusion should be assigned than that they do not seem to contribute anything of value to the promotion of the general scheme of the Forest Preserve.

If, therefore, the words "lands now owned or hereafter acquired" are plain and unambiguous, and not in conflict with other provisions of the Constitution, they must be held to mean what they, in plain language, say; *but they are ambiguous*, as we shall now attempt to show.

The word "owned" is ambiguous because, when the Constitution was adopted, the State owned lands in the Forest Preserve counties by two distinct kinds of ownership. The words "now owned" might apply to lands which the State had already acquired by purchase and which it then "owned," as proprietor, or to lands which it had acquired from Great Britain by treaty and which it then "owned" as sovereign; or it might apply to both kinds of land. The question is, does the word "owned" apply to both kinds of land? If not, then to which kind was it intended to apply? It requires mental effort to discover, in the language used, the lands to which the word "owned" was intended to apply. Thus an ambiguity arises which calls for interpretation in order to discover the true meaning and intention of the lawmakers.

Before attempting to discover the true construction of the words, "now owned or hereafter acquired" the fact that the State then owned lands in the Forest Preserve counties by two distinct kinds of title should be brought into view. In the Long

Sault case it was conceded on all sides that the State owned the lands under the navigable waters of the St. Lawrence river which the Legislature had directed the Commissioners of the Land Office to convey to the plaintiff corporation.

By section 2, title 1, chapter 2, part 1, of the Revised Statutes, St. Lawrence county was described as follows:

“The county of St. Lawrence shall contain all that part of this State bounded as follows: Northerly and north-westerly by the bounds of the State * * *.”

The State is bounded at this point by the center line of the St. Lawrence river, which is an international boundary. St. Lawrence county includes, therefore, the lands under water to the center of the river.

If St. Lawrence county is a Forest Preserve county, and if all the lands “owned” by the State in that county are Forest Preserve lands, irrespective of the *kind of title* by which the State claims, as owner, then the lands involved in the Long Sault case are part of the Forest Preserve, even if the purpose of the Legislature in making such lands a part thereof is not apparent.

Lake George lies wholly within the limits of Warren county, which is a Forest Preserve county. It is conceded that the riparian owners are bounded by the line of high-water mark, and that the State owns all the land within such line. Does the State own this land *in the same sense and by the same sort of title* as land acquired by purchase at tax sales, or upon the foreclosure of mortgages?

In *Smith v. City of Rochester*, 92 N. Y. 463, the defendant, acting under legislative authority, had diverged the waters of Hemlock lake and was using the same for municipal purposes, to the damage of mill owners whose properties were located upon the banks of the outlet of said lake and whose mills were operated by its waters. The action was to restrain such action by the defendant. In writing the opinion of the court, Chief Judge Ruger said:

“We have arrived at the conclusion that all rights of property to the soil under the waters of Hemlock lake were

acquired by and belong to its riparian owners, while such rights only over its waters belong to the State as pertain to sovereignty alone."

In distinguishing between the State's title to land as sovereign, and its title as proprietor, Judge Ruger quotes with approval from the dissenting opinion of Judge Edmonds in *Gould v. Hudson River R. R. Co.* (6 N. Y. 546), as follows:

"When regarding the rights of the State in respect to lands, we must not be unmindful that it has two interests, one governmental and the other proprietary. Or as it is divided by Mr. Prudhon in his *Traite du Domain Public*, the public domain which is that kind of property which the government holds as mere trustee for the use of the public, such as public highways, navigable rivers, salt springs, etc., and which are not, of course, alienable; and the domain of the State, which applies only to things in which the State has the same absolute property as an individual would have in like cases."

And, in speaking of the State's title to land under navigable water, Judge O'Brien, in writing the opinion of the court, in *Coxe v. State*, 144 N. Y., 396, at page 405, says:

"The question is governed in this state by the rules of the common law, modified in some respects by statute, and adapted by the courts to such changes of conditions as exist here. That the dominion and ownership of such lands is in the sovereign for the benefit of the public has long been settled. Such dominion and ownership of property generally implies the power of absolute disposition, but with respect to the land under navigable or tide waters an important limitation has been engrafted upon this power from the nature of the title. *The title of the state to the sea-coast and the shores of tidal rivers is different from the fee simple which an individual holds to an estate in lands. It is not a proprietary, but a sovereign right*, and it has been frequently said that a trust is engrafted upon this title for the benefit of the public of which the state is powerless to divest itself."

Again, on page 407, *supra*, Judge O'Brien, says:

"But it was never supposed that the state could grant away any of this portion of its domain for mere speculative purposes, or that it could traffic in it like an individual who owned property which he had the right to sell at such price and for such purposes as his immediate wants and interests seemed to require. It is quite conceivable, however, that such grants have been made under such circumstances and for such purposes that, when recalled or revoked, there may arise, in favor of the grantee and against the State, an obligation to restore the consideration paid, or to make good losses incurred in consequence of improvements or expenditures upon the faith of the grant, which the state is bound to discharge in honor and good faith."

The State cannot abdicate any of its functions as sovereign. It cannot abandon its power over lands under navigable water which must necessarily be exercised from time to time in the interest of commerce and navigation nor can it convey the land under such waters except subject to the right of the State to enter thereon without incurring liability for damage, and to regulate the same in the public interest. (Long Sault case, 212 N. Y. 1 at page 10.) The third paragraph of the head note in *The Lewis Blue Point Oyster Cultivation Company v. Briggs*, 198 N. Y. 287, reads as follows:

"The lessee of land under the navigable waters of Great South Bay, an arm of the sea, whose lessors hold title thereto under colonial patents from the king of England, cannot maintain an action to restrain a contractor employed by the United States government from dredging a channel over the land in question for the purpose of increasing the depth of the water in aid of commerce and navigation, because the digging of such channel would destroy oyster beds planted by such lessee and materially reduce the value of the land for oyster cultivation. The lessee has no right in the land under water that is not subject to the power of the United States to construct the improvement in question without making compensation to it. When it planted

its oysters it ran the risk that the crop might be interfered with whenever Congress decided to dig a channel, or otherwise improve navigation in the bay in question for the benefit of commerce."

On the other hand, the State's title to lands owned by it within its jurisdiction, other than lands as to which its title is that of sovereign only, is a fee simple absolute,—the same kind of title which a private citizen acquires by patent from the State.

The nature of the State's title to lands acquired as proprietor, is clearly stated by Judge Andrews in *Seneca Nation v. Christie*, 126 N. Y. 122, at page 135, as follows:

"The nature of the Indian title to lands on this continent was established by the system of public law adopted by European nations regulating their possessions here. It became the recognized principle that discovery followed by possession vested in the sovereign by whose subjects the discovery was made *the absolute title to the soil of the lands* within the limits of the discovered territory, subject, however, to the right of occupation by the Indian tribes, which could only be extinguished by their voluntary consent, unless forfeited under the laws of war. It was a necessary sequence to the claim that the sovereign had the ultimate title to the soil, that the right to extinguish the Indian occupation was exclusively vested in the sovereign. The Indians were held to be incapable of alienating their lands except to the crown, and all purchases made from them without its consent, were regarded and treated as absolutely void. The title of the crown was subject to grant, *but a grant from the crown only conveyed the fee subject to the right of Indian occupation and when that was extinguished under the sanction of the crown, the possession then attached to the fee and the title of the grantee was thereby perfected.*"

The lands which the State owns in the Forest Preserve counties, therefore, outside of lands under navigable water, *it owns as proprietor, and not as sovereign*, whether its title be derived directly from the English Crown or by deed from the Comp-

troller, pursuant to tax sales or otherwise. It thus appears that, in 1885 the State "owned" two distinct kinds of lands in the Forest Preserve counties. One kind, which it acquired, as sovereign from Great Britain and which it held, not for proprietary or beneficial enjoyment, but as an inalienable trust for the benefit of all the people of the State; the other which it owned as proprietor, and by a title which gave to the State the beneficial use and enjoyment of the land and the power to grant the same in fee simple absolute. These two classes of lands are, in a sense, "owned" by the State; and we now return to the question whether the words "now owned or hereafter acquired," refer to both classes or only to one? If the statute had provided that the lands then owned by the State should constitute the Forest Preserve it could be said with some showing of reason that both classes were included; but the addition of the words "or hereafter acquired" makes it certain that only the class of lands owned by the State *as proprietor* was intended to constitute the Forest Preserve. The State might, after the act was passed, acquire new lands in the designated counties, but it could not possibly *acquire* in the future what it already owned; and the State's title to all lands under its navigable waters was perfected at one and the same time by the treaty which separated the Colony of New York from the Mother Country. Inasmuch, therefore, as the words "the lands now owned or hereafter acquired" are spoken in one breath and are inseparably connected in sense by their collocation in a single clause of the statute; and inasmuch as the lands thereafter to be acquired could not refer to lands under navigable water, the words "now owned" *must be restricted to lands acquired for beneficial enjoyment and owned by the State as proprietor and not as sovereign.* The words "now owned" are restricted and explained by their association in the same clause with the words "hereafter acquired" under the familiar rule known as *noscitur a sociis*.

It is perfectly plain, therefore, that when the Legislature by the Act of 1885 declared that the lands at that time owned, or thereafter to be acquired by the State, should constitute the Forest Preserve, it was not intended to include therein such lands as the State already owned as sovereign.

This view is fully sustained by Endlich in his work on Interpretation of Statutes, where he says:

“ § 400. *Noscuntur a sociis*. When two or more words, susceptible of analogous meaning, are coupled together, *noscuntur a sociis*. (Where the language of the act itself points to the associated words as interpreting the more general ones, the application of the rule is obvious. Thus, where an act imposes a tax upon all real estate, to wit, upon various specified kinds of real estate, and from such specification shown to be private property, it is clear that the general words are to be controlled by the specifications, and that the broad phrase embracing all real estate, nevertheless does not include property, e. g., of the United States within the territory to which the tax applies. But, even in the absence of such a clear manifestation of intent, associated words) are understood to be used in their cognate sense. They take, as it were, their color from each other; that is, *the more general is restricted to a sense analogous to the less general*.”

It is evident that the word “or” in the phrase “now owned or hereafter acquired,” as used in section seven of the Act of 1885, must be construed to mean “and.” The clear meaning is: The lands, which the State now owns, *and* the lands which it may hereafter acquire, in the designated counties, shall together constitute the Forest Preserve. Then follows section eight which reads: “The lands now or hereafter constituting the Forest Preserve shall be forever kept as wild forest lands.” Here the word “or” is clearly disjunctive. The meaning is that the lands which now constitute the Forest Preserve, or which, by additional purchases may hereafter constitute the same shall forever be kept as wild forest lands.

But it must now be clear to the judicial mind, from the very language adopted by the legislature, in defining the Forest Preserve, that the only lands had in view as constituting the same were lands which could be acquired by purchase or by the exercise of the power of eminent domain, and which, when so acquired, the State would own as proprietor and not as sovereign.

It remains to discuss very briefly other considerations which lead to the same result.

Second. The title of the Act of 1885 confirms the views above expressed. Said title reads as follows: "An Act to establish a forest commission and to define its powers and duties and *for the preservation of forests.*"

The main purpose of the Act of 1885 was to preserve the forests which protected the sources of the Hudson, Mohawk and Black rivers. To this end the statute forbade the sale of State-owned lands in certain counties; and declared that "The lands now or hereafter constituting the Forest Preserve shall be forever kept as wild forest lands." It seems absurd to speak of preserving the lands under the navigable waters of the Forest Preserve counties as "wild forest lands." It is difficult to see any reason for including lands under navigable water in the definition of the Forest Preserve, if the main purpose of creating the Forest Preserve was "the preservation of forests."

In this case, the language being ambiguous, reference to the title of the Act, as an aid in finding the meaning is legitimate. As was said by Mr. Justice Brewer, in *Holy Trinity Church v. United States*, 143 U. S. 457, at page 462:

"Among other things which may be considered in determining the intent of the legislature is the title of the act. We do not mean that it may be used to add to or take from the body of the statute, *Hadden v. The Collector*, 5 Wall. 107, but it may help to interpret its meaning. In the case of *United States v. Fisher*, 2 Cranch. 358, 386, Chief Justice Marshall said: 'On the influence which the title ought to have in construing the enacting clauses much has been said; and yet it is not easy to discern the point of difference between the opposing counsel in this respect. Neither party contends that the title of an act can control plain words in the body of the statute; and neither denies that, taken with other parts, it may assist in removing ambiguities. Where the intent is plain, nothing is left to construction. Where the mind labors to discover the design of the legislature, it seizes everything from which aid can be derived; and in such case the title claims a degree of notice, and will have its due share of consideration.' "

Third. Subsequent legislation is in entire harmony with the construction of the statute, as above stated. It should be borne in mind that the Forest Preserve was created and defined by the Legislature and that the framers of the Constitution adopted the definition as they found it. Where ambiguity exists in a statute, subsequent legislation may be resorted to to throw light on the meaning and intention of the Legislature, provided the subsequent legislation is in *pari materia* with the statute to be construed. This is particularly true where the later legislation expressly refers to the earlier statute. By chapter 280 of the Laws of 1886, the Legislature provided for the taxation of the lands owned by the State in the Forest Preserve counties. The first sentence of the Act reads:

“All wild forest lands belonging to or which may hereafter be acquired by the state within the limits of the forest preserve as established by chapter two hundred and eighty-three of the laws of eighteen hundred and eighty-five shall be assessed and taxed at the like valuation and at the like rate as those at which similar lands of individuals within such counties are assessed and taxed, subject, however, to the provisions of this act.”

Section seven of the Act of 1885 read:

“All the lands now owned or which may hereafter be acquired by the State of New York within the counties
* * * shall constitute and be known as the forest preserve.”

Nothing is said here about the character of the lands; but the Act of 1886 characterizes these as “wild forest lands” and thereby indicates very strongly that the Legislature had in mind only “wild forest lands” as constituting the Forest Preserve. The Act of 1886 also recognizes the fact that the State owns those lands as proprietor, and authorizes their taxation along with other taxable lands in the towns in which such lands are located. The lands which in 1886 the State authorized to be taxed are the same lands which the year before the Legislature had set apart

as a forest preserve. There is not a suggestion in either statute that the Legislature had in mind lands which the State owned as sovereign, located under the navigable waters of lakes and rivers in the Forest Preserve counties.

Fourth. The exceptions subsequently engrafted upon section seven of the Act of 1885, by an amendment thereof, enacted as chapter 520 of the Laws of 1888, are in harmony with and support the same construction. The amendment to section seven is in the following language:

“except all such lands not wild lands as have been or hereafter may be acquired by the State of New York upon or by foreclosure of or sale pursuant to any mortgage upon lands made to the Commissioners for loaning certain moneys of the United States, usually called the United States deposit fund; and all such excepted lands acquired by the State of New York may be sold and conveyed as provided by law.”

By a later act, lands of the State in incorporated villages were also excepted. From these amendments it is manifest that the language of the original act was seen by the Legislature to be too general; and when taken literally, even under the construction now sought to be given to the act, it took in farm lands owned by the State and acquired by the foreclosure of Loan Commissioner mortgages, and also small parcels in cities and incorporated villages in the Forest Preserve counties, which, by reason of their location or improved condition, were considered worthless for Forest Preserve purposes.

The statute was therefore amended so as to exclude such lands from the Forest Preserve and permit their sale by the Commissioners of the Land Office in the ordinary way.

The significance of these amendments lies in the fact that these farm lands and other lands located in cities and villages could be reforested, even if from their location, new forests growing thereon would not contribute materially to the main purpose of the Forest Preserve; but lands of the State under the navigable waters of the St. Lawrence river or of Lake George are, it must be conceded, of no value whatever as tending to promote the objects of the Forest Preserve. If, therefore, these lands under the original

definition of the Forest Preserve, were considered by the Legislature to be by the strict language of the statute included in the Forest Preserve, why were they not afterwards excepted by the Legislature which excepted other lands which could easily be reforested.

It is also a well established rule of construction that where particulars are excepted from the general language of an act, everything not so excepted must be presumed to be included in the general language. If, therefore, the Legislature had understood that lands under navigable waters were part of the Forest Preserve, it goes without saying that they would have excepted improved farm lands, and left within the purview of the statute lands under navigable water.

Fifth. It would not be safe, I think, to predicate the power of the Board to grant the lands sought to be acquired by the petitioners upon the assumption that said lands, or any part thereof, are within the corporate limits of the village of Lake George. Assuming, but not conceding, that the boundaries of the village, as described by the supervisor and filed with the Secretary of State, include lands under the navigable waters of the bay, in front of the village of Lake George, an examination of the files and records of the office of the Secretary of State discloses that the village of Lake George has never been legally incorporated. The Village Law provides, in substance, that if a majority of the votes cast are in favor of incorporation

“Then such territory shall become and be an incorporated village under this chapter from and after the date of such election, and upon the receipt by the supervisor of the town or towns in which the territory constituting the village is situated, of the certificate of the secretary of state under the seal of his office certifying that he has received and has placed on file in his office an *outline map and description of the corporate limits of such village, certified as being true and correct by the supervisor of the town or towns in which the territory constituting such village is situated*, together with the date of filing the same in his office. The certificate of the secretary of state herein required shall become a record of the village clerk's office, and the date of the filing of the

map and description by the secretary of state shall complete the incorporation of such village, unless the election is set aside on appeal as herein provided."

An inquiry at the office of the Secretary of State discloses that no map or description of the village of Lake George, made and certified as required by law, has ever been filed in his office. In fact, no map of the village, of any kind, has ever been filed. What purports to be a description of the boundaries of the proposed village of Lake George, the same being part of the election notice required in such cases, has been filed in the office of the Secretary of State; but this uncertified description does not, in terms, or by fair implication, include any of the lands under the waters of Lake George. *The sale of the lands covered by this application, therefore, cannot be justified by assuming that the same, or any part thereof, are within the corporate limits of the village of Lake George.*

Sixth. Nor can the power of the board to grant said lands be predicated upon the proposition that if the lands under navigable waters be treated as part of the Forest Preserve, petitioners would be deprived of any property right, or of the equal protection of the laws, as claimed by an elaborate argument under point three of petitioners' brief.

The argument proceeds upon the assumption that petitioners have an absolute right to purchase; whereas they have only a preemptive right. In the absence of any constitutional inhibition, the Board would not be bound to make the grant. The right of a riparian owner to reach navigable water and to erect docks for that purpose is one thing, and the right to acquire title to the soil over which the docks extend for the purposes of beneficial enjoyment is quite another. This distinction is plainly suggested by counsel in his reference to the action of the court in requiring petitioners to remove obstructions created by them upon the very lands now sought to be acquired. The court, however, was careful to say that the right of the defendants to docking facilities could not be disturbed.

The power of the Commissioners of the Land Office to grant lands under navigable waters in the Forest Preserve counties should be rested upon the broad ground that when the Act of 1885

and its amendatory acts are properly construed, it is plain that such lands were never intended to form a part of the Forest Preserve.

I advise, therefore, that the Commissioners of the Land Office have power, in their discretion, and subject to such conditions and restrictions as they deem it wise to impose, to grant to the petitioners the lands described in their petition.

Respectfully submitted,

MERTON E. LEWIS,
Attorney-General.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *December 4, 1918.*

Before the Standing Committee on the hearing of remonstrances of the Commissioners of the Land Office. In the Matter of the Application of the DELAWARE AND HUDSON COMPANY and FORT WILLIAM HENRY HOTEL COMPANY for a grant of land under the waters at the foot of Lake George, Warren county.

This application having been referred to the Standing Committee and a hearing having been held at the village of Lake George, and due deliberation being had thereon and the Attorney-General having rendered his opinion to the Land Board on the question of the construction and meaning of section 7 of article VII of the State Constitution, with a special reference to the power of the Commissioners of the Land Office to make grants of lands under the waters of Lake George, to the effect that said lands under the waters of Lake George were no part of the Forest Preserve and, therefore, were subject to grant, your Committee reports that it concurs in the opinion of the Attorney-General and it hereby recommends that the grant be made to the applicants as applied for, subject, however, to certain conditions and restrictions in the interest of the public, to be agreed upon hereafter by the Standing Committee after a conference to be had between Mr. Lewis E.

Carr, of counsel for the applicants, Mr. Howard J. Bush, of counsel for citizens of Lake George village and vicinity, and the State Engineer and Surveyor.

Respectfully submitted,

MERTON E. LEWIS,

Attorney-General.

JAMES L. WELLS,

Treasurer,

FRANK M. WILLIAMS,

State Engineer and Surveyor.

STATE OF NEW YORK,
OFFICE OF THE ATTORNEY-GENERAL,

ALBANY, *December 30, 1918.*

REPORT OF THE STANDING COMMITTEE OF THE COMMISSIONERS
OF THE LAND OFFICE.

To the Commissioners of the Land Office:

GENTLEMEN.—Your Standing Committee, to which was referred the negotiation and adjustment of an agreement with the Cayuga Nation of Indians resident in the State of New York for the settlement of a claim against the State, referred to in chapter 255 of the Laws of 1909, begs leave to submit the following report:

By chapter 255, above referred to, the Commissioners of the Land Office were empowered to adjust the claim of the Cayuga Nation of Indians resident in the State of New York by entering into an agreement with said nation for the settlement of said claim on a basis not exceeding the sum of \$247,609.33, including interest on said sum from the day of the presentation of said memorial to the Commissioners of the Land Office and computed to the day of settlement. That act further provided that the sum of money so agreed upon should be retained in the treasury of the State in trust for said Cayuga Nation and that interest thereon at the rate of five per centum per annum should be paid over to the said Cayuga Nation, except that such principal sum might become chargeable

with the expense incurred by the said nation in the making, prosecution and settlement of said claim. The act further provided that such settlement, when agreed upon by the Commissioners of the Land Office and the representatives of the Cayuga Nation of Indians, should be subject to the approval of the Governor of this State.

Efforts have frequently been made since chapter 255 of the Laws of 1909 was enacted, to bring about an adjustment and settlement of the claim referred to. The Standing Committee of the Commissioners of the Land Office has from time to time given consideration to the matter and has faithfully endeavored to bring about a settlement thereof. An agreement was submitted to, and disapproved by Governor Hughes during his administration. Subsequently an agreement was submitted to Governor Sulzer, and likewise disapproved. The matter has been pending since 1915 before the Standing Committee now in office, and hearings have been had thereon from time to time, but no substantial results have been accomplished.

In the meantime and for several years the Legislature has annually appropriated and caused to be paid over to the representatives of the Cayuga Nation of Indians resident in the State of New York an amount equal to the interest at five per centum per annum upon the sum of \$146,857, which is two-thirds of \$165,072.89 less \$18,215.89 allowed for expenses. It appears that the language of the act above referred to, which makes specific reference to the Cayuga Nation of Indians resident in the State of New York, has been disregarded, and that by some arrangement of which your committee has no accurate knowledge, an amount equal to the interest upon one-third of the above-named sum, to wit, \$82,536.44, less \$9,271.78 allowed for expenses, has been appropriated separately to the Cayuga Indians resident in the far west and known as the Western Band of Cayugas. Your committee has been unable to find any statutory authority for an agreement providing for this division of the fund or for the making of appropriations for the payment of interest to the Western Band of Cayugas.

Your committee has been somewhat embarrassed in its efforts to consummate a settlement with the Cayuga Nation by the fact

that the resident Cayugas are, in the opinion of your committee, occupying lands belonging to the Seneca Nation of Indians on the Cattaraugus and Allegany Reservations. These lands the Cayugas have occupied for many years. To such lands they have no title and no enforceable right of occupation. The Seneca Nation of Indians has repeatedly expressed a desire that out of the fund to be created by the proposed settlement with the Cayugas provision be made for a lease, or instead for the purchase by the State from the Seneca Nation of adequate lands for the use and occupation of the Cayuga Nation, and that payment to the Seneca Nation therefor be guaranteed in and by the settlement with the Cayugas, authorized as aforesaid.

By the act of the Legislature, chapter 255, it was provided that if the Commissioners of the Land Office should succeed in settling the claim of the Cayuga Nation of Indians for an amount not exceeding the above-mentioned sum, such Commissioners should be authorized to investigate and report to the Legislature whether the lease or purchase by the State of adequate lands can be procured from the Senecas by the use of some portion of the principal sum above mentioned. Your committee has endeavored to bring about an adjustment not only of the claim of the Cayuga Nation, but also a form of agreement which could be submitted to the Legislature for the purpose of accomplishing at the same time the purchase or lease of such lands belonging to the Senecas as the Cayugas require. In this effort your committee has been unsuccessful.

Under the circumstances, therefore, your committee is of the opinion that further negotiations under the provisions of chapter 255 above referred to will be futile. The Cayuga Nation, having been annually in receipt of the interest upon two-thirds of the amount specified in chapter 255, appear to be reluctant to permit any depreciation of such annual appropriation.

Your committee is of the opinion that the demand of the Seneca Nation that their claim against the Cayugas for the long-continued use and occupation of their lands be recognized and adjusted, is just and reasonable. For that reason your committee has been unwilling to recommend that the Commissioners of the Land Office enter into an independent agreement with the Cayuga Nation

because of the conviction that if an agreement should be once consummated it might be impossible to bring about a subsequent adjustment of the controversy between the Senecas and the Cayugas.

Under the circumstances, therefore, your committee has reached the conclusion that it is the duty of the Commissioners of the Land Office to report to the Legislature at its next session their inability to accomplish the purposes contemplated and to perform the duties imposed upon them by the provisions of chapter 255 of the Laws of 1909. Your committee also feels it to be the duty of the Commissioners of the Land Office to recommend to the Legislature that it refrain hereafter from making any appropriation for the payment of interest upon the sum assumed to have been agreed upon in a settlement authorized by said chapter 255, until such time as the controversy now existing between the Senecas and Cayugas shall be settled and adjusted to the satisfaction of the Commissioners of the Land Office.

All of which is respectfully submitted.

MERTON E. LEWIS,
Attorney-General.

JAMES L. WELLS,
State Treasurer.

FRANK M. WILLIAMS,
State Engineer and Surveyor.

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STATE OF NEW YORK

EIGHTH ANNUAL REPORT

OF THE

Conservation Commission

1918

ALBANY
J. B. LYON COMPANY, PRINTERS
1919

HONOR ROLL

★		★
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Caplin, Louis	Junior Clerk	Private, Student Army
Carter, Charles	Laborer	Private, 19th Co., 157th Dep. Brig.
Chamberlain, T. K.	Laborer	Private, Co. A, 1st Bn., C. W. S.
Cramer, W. T.	Game Protector	Corporal, 40th Co., 152 Dep. Br.
Curry, H. J.	Game Protector	Private, Q. M. C.
Davis, A. T.	Forest Surveyor	53d Battery, C. O. T. S.
De Cora, H. A.	Forest Ranger	Private, 503d Engrs.
Donahue, E. P.	Laborer	Second class Seaman, U. S. N. R.
Duffy, M. J.	Junior Asst. Engineer	Private, 15th Bat. Medical Corps.
Fleig, H. A.	Axeman	22d Co. C. O. T. S.
Flynn, J. F.	Laborer	Private, 417th Tel. Bn., Co E.
Fogelman, R.	Blister Rust Inspector	Private
Gale, H. F.	Game Protector	Private, Co. L. 326th Inf.
Gavett, R. M.	Blister Rust Inspector	Private, Aviation Corps
Hall, S. C.	Wellman	Private, 310th Inf. M. G. Co.
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Hopkins, A. S.	Forester	Second Lieutenant, A. S. S. R. C.
Katz, A. G.	Blister Rust Inspector	Private
Kolbe, H. G.	Blister Rust Inspector	Private
Johnson, H.	Junior Engineer	Captain, Dept. Cons. and Forestry
Mahoney, J. T.	Stenographer	Second Lieutenant, Aviation Sec., S. C.
Madison, Albert	Observer	Private, 63d M. G. Co.
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McGuirk, E. J.	Clerk	Base Hospital, No. 33.
McHugh, J. F.	Junior Asst. Engineer	2d class Seaman, U. S. Torp. Sta.

HONOR ROLL—Continued

★		★
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Oughterson, D. B.	Game Protector	Corporal, 302 Field Bn., S. C. Co. C.
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Porette, W.	Hatchery Laborer	Corporal, 105th Inf. Co. I.
Paul, B. H.	Forester	Private, Medical Detachment
Porter, F. D.	Assistant Engineer	2d Lieutenant, E. O. R. C.
Proechel, Harry	Forest Ranger	Private, Co. G., 51st Pioneer Inf.
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Rogers, R. S.	Blister Rust Inspector	Private, 20th Engrs. (Forest)
Ryan, E. G.	Blister Rust Inspector	Private
Sargent, E. H.	Assistant Engineer	Captain, Technical Board, G. P. A.
Shannon, H. A.	Blister Rust Inspector	Private, 10th Engrs. (Forest)
Stahl, W. E.	Junior Engineer	Corporal, Hdq. Detach., 78th Div.
Suter, R.	Assistant Engineer	Captain, E. O. R. C.
Thomas, F. D.	Clerk	3d-class Yeoman, U. S. N. R. F.
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Weber, C. G.	Blister Rust Inspector	Private, 20th Engrs. (Forest)
Wykes, P. B.	Asst. Supt. Game Farm	Private, Medical Corps.

STATE OF NEW YORK

CONSERVATION COMMISSION

GEORGE D. PRATT.....*Commissioner*
ALEXANDER MACDONALD*Deputy Commissioner*
WARWICK S. CARPENTER.....*Secretary*
MARSHALL McLEAN*Counsel*
CLINTON G. ABBOTT.....*Confidential Secretary and Editor*

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[[]]



TO DO ITS BIT



BIRDS MAKE AGRICULTURE POSSIBLE

*By Killing Insect and Rodent Pests, They Save
Crops Enough to Feed Our Army "Over There"*

FISH AND GAME FURNISH FOOD

THOUSANDS OF TONS ARE TAKEN ANNUALLY

*Conservation Laws are designed to make Fish, Game
and Birds more abundant and are vitally necessary
for National Welfare*

**THE MAN WHO ILLEGALLY TAKES GAME OR FISH OR
KILLS BIRDS DECREASES FOOD RESOURCES AND
DEFRAUDS HIS COUNTRY**

**REPORT VIOLATIONS TO THE NEAREST GAME PROTECTOR
CONSERVATION COMMISSION. ALBANY**

Wild life will be more abundant when the facts stated on this poster
are more fully understood.

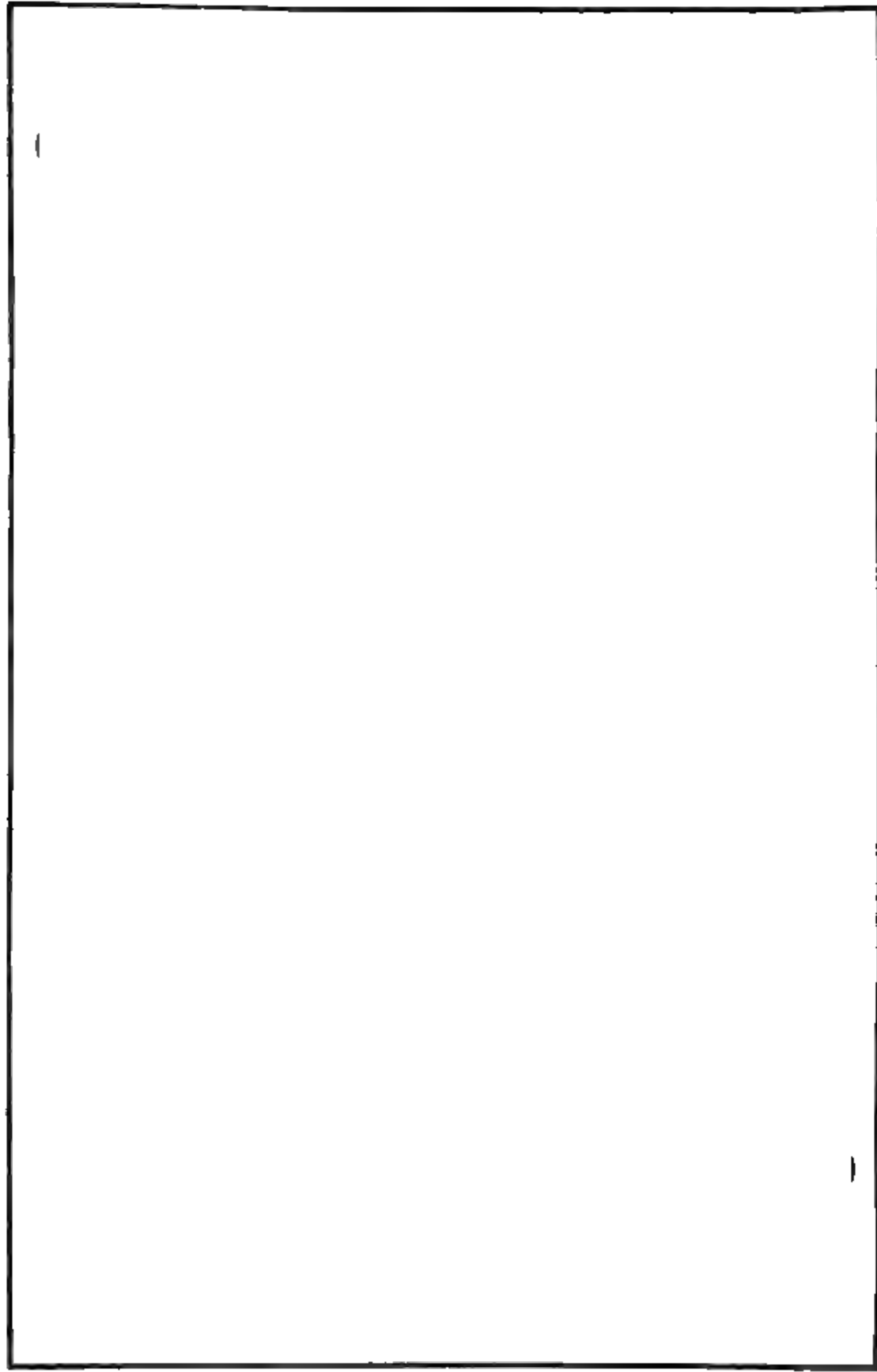


Chart showing the organization of the Conservation Commission.

ANNUAL REPORT
OF THE
CONSERVATION COMMISSION
1918

AS TRANSMITTED TO THE LEGISLATURE, JANUARY 15 1919

EIGHTH ANNUAL REPORT
OF THE
CONSERVATION COMMISSION
1918

ALBANY, N. Y., *January 15, 1919*

HON. EDWARD SCHOENECK, *Lieutenant Governor:*

HON. THADDEUS C. SWEET, *Speaker of the Assembly:*

GENTLEMEN,—Herewith in accordance with law I transmit to the Legislature the Eighth Annual Report of the Conservation Commission.

Respectfully yours,

GEORGE D. PRATT,
Commissioner.

By WARWICK S. CARPENTER,
Secretary.

EIGHTH ANNUAL REPORT

OF THE

CONSERVATION COMMISSION

Pursuant to statute, the Conservation Commission begs to submit, for the consideration of your honorable body, a report of its work for the past year, as well as certain recommendations which it trusts will meet with your approval.

In the text of this report the discussion of the work of the Commission has been carried down to the end of the calendar year, December 31, 1918. Financial and other tables which are directly related to the fiscal year are, however, carried only to the end of the fiscal year, June 30, 1918. This method of preparing the report has been adopted because of the fact that the Legislature each year must consider many questions of conservation which require knowledge of the Commission's doings down to date, and not merely information that is already six months old.

Under the statute the work of the Commission is grouped into four divisions. The report accordingly considers each division in turn, preceding them, however, with a discussion of general topics. This is followed by the report of the Conservation Bureau of the Attorney-General's Office and the Annual Financial Statement of the Commission. The arrangement is as follows:

- I. General Topics.
- II. Division of Fish and Game.
- III. Division of Lands and Forests.
- IV. Division of Waters.
- V. Division of State Reservation at Saratoga Springs.
- VI. Summary of Legislative Recommendations.
- VII. Conservation Bureau, Attorney-General's Office.
- VIII. Financial Statement of the Conservation Commission.

GENERAL TOPICS

NEW YORK'S SYSTEM OF CONSERVATION

Conservation, as it has been developed in the State of New York, covers the protection and increase of all of the manifold forms of useful wild life, including animals, birds and fish; the protection and increase of forests and their wise utilization; and the proper conservation and use of the State's water resources, whether potable waters, medicinal waters or waters whose chief use is for the generation of power.

For the care of all of these great natural resources New York has gradually developed a system of conservation which is dealing efficiently with the resources involved. That this is generally recognized by experts in the various phases of conservation is evidenced by the fact that the methods practiced in New York are in many instances serving as models in other states. This is true not only in the field of the propagation of fish and game and the protection of wild life, but also in forestry and water power.

New York has done more in the survey and study of power streams than any other state, and is now in a position, as a result of these studies and surveys, to immediately take the lead in the actual development of power. In this connection it is interesting to know that one of the Assistant Engineers of the Division of Waters, who is serving as an engineer officer with the American Expeditionary Forces in France, has sent to the Commission for an exhibit of publications, maps and other data, showing how New York State has handled its water power studies, for the information of the French officers engaged in the development of water power in the Alps and the Pyrenees.

The position which New York occupies in conservation matters is due to a variety of factors, some of the more important of which are, surely, the provision of adequate means for carrying on this work, the general public support that conservation has had among all classes of citizens in the State, and the centralization of responsibility for getting results.

The diagram of the organization of the Commission's personnel, facing page 15, will show clearly the centralization of authority that has been effected in all parts of the organization, and indicate the comprehensive and homogeneous basis upon which the work has been organized by the various acts that have been passed in the last ten years. The steady development along logical lines, during all of this time, has resulted in the present high level of the organization, and is responsible for its being copied in other states.

A complete analysis of this system and a thorough discussion of the interrelation of its various parts could readily be expanded to fill the entire space of this report. It is sufficient to point out, however, that New York's scheme of conservation is well rounded and comprehensive and has the merit that comes from the gradual growth of many years. Other states have gone through a period of experimentation with separate organizations, but the tendency clearly marked throughout the country in the last few years is to consolidate under one organization patterned after that of New York.

Questions affecting wild life, including fish, are intimately bound up with those of forestry, and forestry is the very beginning of the conservation of water. Each of these three main divisions of conservation requires its trained specialists, but each one of them finds that his problems connect often in unexpected ways with those of another division.

The personnel of the Conservation Commission, represented on the diagram facing page 15 is made up of men trained in their particular work. To what extent this is true is rather surprising on close analysis. Two chiefs of divisions have come up from the ranks, one having been appointed in 1901 and the other in 1903, while their immediate assistants have similarly learned every step of the work. Every Division Inspector began as a local Protector and has been promoted solely for efficiency. The same condition holds in the various bureaus of the Division of Fish and Game, promotions having been made for efficiency, and appointments from outside having been made only where men trained for the work were not available in the organization.

In the Division of Lands and Forests every district ranger was once a local ranger, except one who was a forester in the Com-

mission before being made a district ranger. Rangers and observers who know their districts are kept on year after year, and give a continuity and quality of service that is of the utmost importance in the dealings that the Commission has with the public. The law requires the foresters of the Commission to be trained foresters, and specifies that the office of Superintendent and Assistant Superintendent shall be filled by promotion examination.

The work of stream study, involving surveys, maps, and plans, the collection and interpretation of a great mass of scientific data regarding rain fall, run off and storage, and finally an intimate knowledge of hydro-electric engineering, has resulted in a similar continuity of service in the Division of Waters. This has had much to do with New York's leadership in matters of stream study. In connection with work upon the sanitary quality of waters — the almost new field of pollution elimination — the need is developing for similar expert knowledge, and must be met.

The Division of Saratoga Springs is concerned with work that is highly specialized. The behavior of the springs, described on another page of this report, and the entirely unique difficulties in bottling the mineral waters, difficulties that have been solved only within the last two years, emphasize the necessity for keeping trained employees in that division.

With a logical and comprehensive system of conservation, and trained men in all of its branches, the protection and increase of natural resources in New York State should go constantly forward.

CONSERVATION DURING THE WAR

The war is over and the thoughts of everyone turn now to what the future has in store and to the great problems of reconstruction that must be solved in every field. This is quite as true in conservation as in every other form of endeavor. Upon the entry of the United States into the conflict, conservation everywhere throughout the country went upon a war basis, and the work that the various State and National agencies concerned with it were immediately able to do for the government gave the strongest evidence that the movement rests upon the soundest basis of wise public policy. Though the point of view of the

Commission is now directed toward the future, it is, nevertheless, desired to point out in a few brief paragraphs some of the things that were accomplished as war measures by conservation in the State of New York.

Fish and Game Provided a Food Supply. The food crisis resulted in an immediate agitation in all parts of the country for the nullification of fish and game laws, in order that wild life might be made use of immediately for food to the maximum possible extent. For some time this movement gathered headway, and indications were not lacking that it was deliberately encouraged by those interested in the commercial sale of both game and fish. In connection with it, schemes of all sorts were proposed, some of which were even fantastic in the ideas advanced.

The advocates of the policy of breaking down all game laws presented their proposals to the United States Food Administration, and the point was finally reached where the Food Administration took the matter up for formal conference with both the proponents of letting down legal safeguards and the leading conservationists of the country. After a most careful study of the situation, the Food Administration decided that if conservation laws have been right in the past, if in the years that they have been on the statute books they have operated to produce a more abundant supply of fish and game, year by year, the war was the time of all times when they should be vigorously enforced, not for the advantage of the moment, but for the food requirements of the future, which no one could then foresee. The Food Administration very wisely decided that to abrogate the fish and game laws would result in such a rapid depletion of the stock of wild life that the food resources of the immediate future, which wild life would normally provide, would be very seriously impaired. In other words, it was realized that fish and game provide a very important annual supply of food and one that it would be unwise to decrease in any measure from year to year. As a result of this decision, conservation laws throughout the country were universally upheld.

This decision of the Food Administration did not mean that greater use could not be made of the fish and game. It was found, upon careful study of the situation in each state, that restrictions

could be removed in certain instances without impairment of breeding stock, and that a considerable increase in the amount of food available from that source would result. These modifications consisted chiefly in lessened restrictions on the use of nets, set lines and similar devices, particularly for the taking of the coarser kinds of fish. What New York State did in this direction will be reported in appropriate places throughout the following pages.

On December 8, 1916, a treaty was proclaimed with Great Britain to give protection to migratory birds that range between the United States and Canada. This treaty was to become effective after the passage of an enabling act by the Canadian Parliament and Congress. The Canadian Parliament very quickly fulfilled its part of the obligation under the treaty. In the great rush of legislation in Congress the enabling act became sidetracked under a rule which provided that no measures other than war measures could be considered. The matter was accordingly taken up with the Committee on Rules, and it was pointed out that the treaty and the enabling act were designed to protect many species of birds that are destroyers of insects and weed seeds and that are accordingly of the utmost benefit to agriculture. It was also designed to increase the numbers of other birds, such as water fowl, that in the aggregate constitute a very important source of food. Because of these facts, the Committee on Rules issued a special rule to permit the consideration of the federal migratory bird treaty enabling act as a war measure. The bill was taken up in Congress, while other war legislation of the most important character was under discussion, was passed, and was signed by the President. Like many another step taken under pressure of war, it is no less important in times of peace and reconstruction.

Forestry Furnished Men, Lumber and Fuel. The first war work undertaken by the Division of Lands and Forests was the recruiting of men for forestry regiments to be sent overseas. Their work was the cutting and manufacture of timber, in the forests of France and Great Britain. Lumber in enormous quantities was needed, and to get it in the French and English forests not only saved time, but also ships that would otherwise be required for its transportation. As a result of the recruiting

The herring fishery in the New York waters of Lake Erie produces more than 3,400,000 pounds of these food fishes annually, and must be kept up by restocking.



campaign carried on by the Superintendent of State Forests, New York State furnished more than its quota of volunteers for this work. A number of employees of the Conservation Commission served in the forestry regiments, some of them as officers.

The wood fuel campaign, which is more fully described in another place, was carried on by the Conservation Commission in cooperation with the Colleges of Forestry, Granges, Farm Bureaus and other organizations. The war made necessary a more intensive use of wood-lot resources than ever before, though a use entirely in accord with the scientific principles of forestry that the Commission has for years advocated. It is to be hoped that at least some of the lessons of wood-lot utilization taught by the war will not be immediately forgotten.

The rapidly growing needs of the army and navy for lumber led to a combing of the entire country for timber of all sorts. Locating available supplies was undertaken by the United States Forestry Service in co-operation with the various state agencies. In New York State the Division of Lands and Forests of the Conservation Commission conducted a timber census which located supplies that were immediately drawn upon. This census would have been of greatly increased value if the war had continued. The data collected, however, can now be made to furnish a basis for much constructive forestry in the future.

Water Power was Increased by Emergency Measures. The need for power to operate war industries and the shortage of coal placed additional emphasis upon the necessity for immediate development of the State's water powers. It has been said that if the war had continued for a much longer time, it would have been settled by that country which had the greatest amount of available water power for the manufacture of war materials. Whether or not this was strictly true, it cannot be denied that there was urgent need for more power in New York State at a time when the fullest development of the water powers could not possibly be effected short of a number of years. Nevertheless, it was realized that certain emergency measures could be taken which would materially increase the power immediately obtainable.

For the purpose of bringing about the most effective operation of every power plant in the State during the period of the war,

engineers of the government departments concerned, in co-operation with the Conservation Commission, went over the data, collected by the Commission and its predecessors during the last ten years, regarding stream flow and power possibilities. Their study showed that additional power could be obtained at certain points by drawing to the utmost upon existing reservoirs, by the installation of flash boards upon some dams, and by the interconnection of power plants. Under the system of interconnection that was worked out and put into operation, it became possible for a power plant, where water was available, to supply power to another system that might temporarily be short of water. The regulation of generation and distribution that was effected as a result of this study brought about an immediate saving of coal throughout the State and at the same time created large additional amounts of power.

In accordance with the policy of fullest co-operation with federal authorities, a conference was held in the office of the Conservation Commission between the Conservation Commissioner, State Engineer and Surveyor, Superintendent of Public Works, Attorney-General, and representatives of the War Department and the Fuel Administration. It was brought out at the conference that since the need for power became acute, upon the entry of the United States into the war, the waters of the Barge Canal and waters impounded in canal storage dams had been supplied for power purposes by the Superintendent of Public Works up to the maximum possible at every point without interference with the traffic actually using the canal. Opportunities to obtain more water at other points were discussed, and the State officers agreed to place at the service of the government, for power purposes during the war, all impounded waters controlled by the State at any dams, in so far as this could be done without interference with navigation. It was proposed that a committee representing the War Industries Board and the Fuel Administration be appointed to confer directly with State officials in the distribution of State water necessary for industries. The appointment of this committee was approved by the conference and the plan went into immediate operation.

Saratoga Springs Offered as a War Sanitarium. The resources of the State Reservation at Saratoga Springs were

The new bath house under construction at Saratoga will surpass either of the old ones and relieve much congestion.

THE AMERICAN SPORTSMAN'S CREED

LET ME pause in these momentous days and think with wonder and reverence how the spirit and activity of the American pioneer hunters and fishermen have given us the American soldier — that splendid type of the land of the free and the home of the brave.

I WANT my boy and his comrades and the boys of the future to receive this heritage of gun and rod. It is a heritage of the open, which now must be idealized to a love of nature and a thoughtfulness for the meaning and preservation of life.

FEELING this, I record my unalterable belief that a Sportsman should

1. Never in sport endanger human life.
2. Never kill wantonly, or needlessly or brutally.
3. Obey the laws of State and Nation, work for better laws, and uphold the law-enforcing authorities.
4. Respect the rights of farmers and property-owners and also their feelings.
5. Always leave seed birds and game in covers.
6. Never be a fish-hog.
7. Discourage the killing of game for commercial purposes by refusing to purchase trophies.
8. Study and record the natural history of game species in the interest of science.
9. Love Nature and its denizens and

Be a Gentleman.

TO this ideal I consecrate myself — that sport shall not be my only aim — that my reward and my lesson shall be in the thrill of the chase and the glory of the heights, and the whistle of the stag — in the music of the murmuring stream and the leap of the playing trout — in the gold of the autumn's woods and the whirr of the ruffed grouse — in the sweet soft scent that breathes from off the sea and in the beauty and silence of the lonely hills and dells.

(Written by Zane Grey for the American Game Protective Association.)

offered to the National Government for the treatment of wounded and incapacitated soldiers. The great spas of Europe have been in constant use in this way since the war started, and the Commission felt that the State Reservation at Saratoga could be used for no better purpose than the treatment of our own men. The offer made to the Surgeon-General included land upon which to erect a temporary hospital, without charge for rent, and all necessary mineral water for the bathing treatments, delivered to the plumbing system of the hospital without charge. It also included medicinal waters at the actual cost of bottling. The Commission also offered, if the Surgeon-General approved, to treat a limited number of cases at one of the existing State Bath Houses, as a demonstration of what the Saratoga waters can do for proper cases. When the armistice was signed, and all new constructions were abandoned, the project was necessarily given up.

CONSERVATION AND RECONSTRUCTION

Importance of Increasing Wild Life. Facing this page is reproduced "The American Sportsman's Creed" recently written by Zane Grey, and distributed throughout the country by the American Game Protective Association. Its first two paragraphs are expressions of appreciation of what outdoor sport has done for the country in the past and a hope and a promise for the future. No elaboration is needed here of the value of hunting and fishing and out-of-door sport in the development of the highest type of American manhood and womanhood.

A volume might be written upon the value of fish and game as food, and the subject would not be exhausted even after its discussion from that standpoint. Evidence of this value will appear on the pages devoted to the Bureaus of Fish Culture and Inland Fisheries.

In addition, wild life enters into industry to an extent little appreciated by many people. For instance, New York's raw fur crop during 1918-19 will be worth in the neighborhood of two million dollars to the trappers, farmers and hunters themselves. In New York City twenty-five thousand people are engaged in the fur industry and the wages paid them each year are between four and five million dollars.

The service that birds render to agriculture by destroying weed seeds and insects is now thoroughly understood and appreciated. Without them no crops would be possible, and farmers are accordingly among the strongest bird conservationists.

Wild life is necessary for the well-being and happiness of the people of New York State in so many different ways, economic, physical and æsthetic, that an opponent of wild life conservation must be either antagonistic to public welfare or uninformed regarding one of the most important means for accomplishing that welfare.

Correct Forestry Necessary for National Welfare. In the European countries, where the destructiveness of the war was most felt, reconstruction of forests must be immediately undertaken. In this country the forestry lessons taught by the war are quite as apparent, though the destruction on account of the war has not been so great. Destruction of American forests by other causes, however, has been far more severe for many years. While the European countries for generations have conserved their forests with the greatest care, have replanted when they have cut down, and have kept out forest fires, the method followed in America has been to use the great natural resources of forest land as if they were inexhaustible. One of the results of this improvidence was that when the war brought an enormously increased demand for many kinds of timber, scouting over the entire country had to be resorted to for the purpose of locating available standing trees.

The forestry lessons taught by the war are that reforestation of valuable trees must be practiced on a scale never before undertaken in this country; water sheds must be protected by reforestation, for the purpose of greater power; timber growing must be encouraged by proper taxation, in order that it may be profitable for land owners to use suitable land for the production of a forest crop; wood must be used more freely as fuel; forests must be protected from fires more effectively than ever before. These points are mentioned here, though without elaboration, because it is important that all of these lines of endeavor again take their proper place in the public view.

Water Power and Industrial Expansion. The need for water power during the war was outlined above. With the war over, the country is faced with the problem of stimulating industry of every sort in order that the men returning from the war, and those released from purely war industries, may be occupied again in peaceful pursuits. Labor must be employed. Industrial expansion is necessary also because the bills of the war must be paid out of the profits of industry and labor. But it is evident that without power there can be no industry.

In the face of the necessity of finding every possible employment for labor, and of paying the bills of the war by increased industry, New York State cannot longer delay the formulation of a definite, constructive water power policy and action upon that policy. In another part of this report the Conservation Commission outlines what it believes to be a proper policy, one that is fair to all of the interests involved, and one that is thoroughly workable. Following the discussion of the policy itself is a statement of certain definite steps that must be taken if the water power policy is to be made effective. The Commission presents its recommendations regarding water power to the Legislature and the people for discussion and consideration in the belief that it is the most important branch of conservation before the State during the present year.

Everywhere throughout the country plans are being made by both Federal and State authorities for work that can be taken up by returned soldiers. One phase of these plans is discussed in this report under the head of "The Utilization of Waste Land." While some reclamation can be done in New York State in accordance with the plans advanced by the Federal authorities, the Commission is of the opinion that the greatest service that New York State can render in reconstruction is to develop its latent water powers, while other States that have no water power, but have large areas of swamp or arid land, undertake reclamation projects for the men who wish to return to agriculture.

If steps are taken immediately to provide for stream control and the development of latent water power, the building of the necessary structures will in itself provide employment for a large number of returning men. The industries that will be stimu-

lated will also ultimately provide employment, though not so quickly. Everywhere throughout the country plans are being made to undertake public work that has long been deferred, in order that this work may play its part in reabsorbing the soldiers into industry. By prompt action in this direction, New York State can make up for some of the delay in matters of water power, and can also render very valuable service by providing employment.

The Utilization of Waste Land. The Federal government has advocated reclamation of swamp land and utilization of other idle land as part of the general national reconstruction policy, the plan providing that large areas of this land be set aside for returned soldiers. With the general principles involved in the government's proposals the Conservation Commission is in thorough sympathy.

While there are no areas of swamp land in New York State that compare in size with those in some other States, and no areas of land that can be made productive by a system of irrigation, there are, nevertheless, some swamp areas of considerable extent that should be reclaimed. Some of these have already been surveyed by the Commission as drainage projects. This matter is now under discussion between the Commission and the Federal authorities.

In some of the western States there are large tracts of cut-over land that should be brought under cultivation, and the Federal plan provides for turning them over to soldiers under proper terms. In New York State, however, no such land exists in large blocks. The cut-over lands in the Adirondacks are not suitable for agriculture and no attempt to make them agriculturally productive could ever be successful.

Development of Saratoga Springs. In spite of war activities, and in spite of the fact that health and pleasure resorts throughout the country quite universally reported a falling off in business during the last year, the number of persons who went to Saratoga for treatment at the State Reservation was greater than ever before in the history of the Reservation. The resources of the bath houses were taxed to their utmost, and it was only by the most complete co-operation between the Reservation officials,

physicians and patients that the number of persons desiring treatment could be cared for. With conditions now returning to normal, it is certain that unless the State makes provision for a larger and better bath house, and for a suitable drink hall, the buildings now used for these purposes will be still further inadequate.

It should not be forgotten that New York State already has an investment of approximately \$1,500,000 in the State Reservation at Saratoga Springs, practically all of which has been spent primarily for the purpose of acquiring land and returning the springs to their natural flow. Such buildings as are there were obtained by the State incidentally to its acquisition of lands and mineral rights. It is now of the utmost importance for the future development of this great health resort that provision be made for structures to meet the needs of the situation and to properly embody the ideals of the Empire State.

EDUCATIONAL WORK

The educational work of the Commission has been continued throughout the year and detailed references to it will be made in the following pages. Practically every branch of conservation requires some form of educational work—the publication of news stories, the writing of special articles for magazines that are furthering conservation, the issuance of publications of the Commission, lectures, or the tremendously important general educational work that can be done through motion pictures.

The motion picture films on conservation are in constant demand in all parts of the State, and even outside of the State, and the Commission's reels are in continual circulation. The films were at first used primarily for lecture purposes by officials of the Commission, but as the number of films has grown and they have more fully covered the field of conservation, they are now being shown quite extensively in the theatres. A patriotic film on the use of wood as fuel has been circuited among the theatres of the State by county fuel administrators for several months and will be in use throughout the entire winter. A film on the propagation of fish and proper methods of planting them, taken by the Commission, has been exhibited during the year on a circuit from the Atlantic to the Pacific.

The press of the State is giving a most valuable co-operation in every phase of the work. This is particularly important and helpful because of the fact that so much of conservation requires public co-operation for its accomplishment. When the public is fully informed regarding the extent of Game Law violations, when the public conscience is fully aroused, and when it is understood in all sections that the laws may no longer be violated with impunity, a large number of infractions will automatically cease. Educational work along these lines is accordingly game protection of the most effective kind. The assistance that the press is giving in this branch of game protection is already showing tangible results.

If applications for pheasant eggs or birds are lacking, they can be stimulated to a point where the output of the farms is hardly able to meet them by a few articles about pheasants, carrying the information that the Commission supplies eggs and birds for stocking purposes. Applications for fish are increased in the same way from time to time. It is a regular part of the educational work to encourage reforestation. The orders for trees, with cash accompanying the orders, flow into the Division of Lands and Forests immediately following the publication of every article. The wood fuel campaign was largely a campaign of education, the results of which were clearly traceable. When the Division of Lands and Forests was recruiting for the forestry regiments, practically all of the applications for enlistment followed the publication of articles in the press. There can be no doubt at all that other general articles on all of the many details of Conservation have a similar effect, though it is not always possible to trace them because of their general character.

RECEIPTS AND DISBURSEMENTS

The financial statement of the Commission, which appears at the end of this report, shows that the receipts for the year were \$349,621.75. This was a falling off from the preceding year of \$52,994.36. The decrease was due entirely to the war, and it is expected that, as soon as conditions have returned to normal the receipts will materially increase. The amount taken in this year, however, was greater than that of any other year in the Commission's history, except the preceding year, which made a high record.

Disbursements for the fiscal year ending June 30, 1918, exclusive of the Division of Saratoga Springs and the Canaseraga Creek Improvement Fund, which are treated separately, were \$875,702.68. This was an increase of \$123,217. An analysis of the disbursements shows that the administrative expenses decreased this year \$2,106.28. Increases are found in the expense for the hatcheries, which included some construction items; in reforestation, which cost more on account of labor and materials and because a new high record was established in the number of trees planted; in fire fighting, on account of dry weather; in the campaign against White Pine Blister Rust; in repairs to Lake George Islands and the St. Lawrence Reservation, which are permanent; and in expenses incidental to the purchase of land for the Forest Preserve. In many items there have been important decreases which are at once apparent upon checking this year's disbursement statement against that of a year ago.

DIVISION OF FISH AND GAME

RECEIPTS

The receipts of the Division of Fish and Game for the fiscal year ending June 30, 1918, were \$329,206.68. This was a decrease of \$36,404.71 from the receipts of the year before, and is due to the unusual conditions caused by the war. It is, of course, but natural that the large number of men in service during the last year should result in a decrease in hunting and trapping licenses. An analysis of other items would show an equally clear connection between the war and the decrease. For instance, during the last fiscal year the receipts from the sale of tags for the importation of foreign game were only \$956.30, whereas in the last five preceding years they had run from \$5,000 to \$11,000 annually.

Now that the war is over and conditions are returning to normal, it is anticipated that the receipts of the Division of Fish and Game for the next few years will show very marked increases along all lines, partly because of the gradual return to normal conditions, and partly also because of the fact that large numbers of return-

ing soldiers, who have never before been interested in out-of-door sports, will unquestionably take them up as the chief means of continuing the outdoor life to which they have been accustomed in the army.

The receipts from fines and penalties were \$55,594.77, whereas a year ago they were \$70,614.35. In this instance, however, the decreased receipts do not represent a falling off in the number of cases successfully prosecuted, since there was a marked increase in the actual number of cases the total successfully settled being 3,209. A single case in 1917 brought in \$15,000, which very materially swelled the receipts from fines and penalties for that year.

The total receipts of the Division of Fish and Game for the fiscal year ending June 30, 1918, were as follows:

DIVISION OF FISH AND GAME RECEIPTS

For Fiscal Year Ending June 30, 1918

Licenses:

Hunting and trapping	\$217,234 06	
Angling	1,251 30	
Spearing	49 00	
		<hr/>
		\$218,534 36

Fines and penalties.....	55,594 77
Shell fish lands—taxes and rentals.....	25,176 45
Net licenses	22,193 70

Trout tagging:

Trout tags	\$2,242 50	
Tagging machines	150 00	
Tagging machines, rentals.....	4 00	
		<hr/>
		2,396 50

Dog licenses	1,061 00
Tagging imported game	956 20

Breeders' licenses:

Section 372	\$745 00	
Section 159	150 00	
Section 200	80 00	
Section 377.	55 00	
		<hr/>
		1,030 00

Possession licenses:

Venison	\$589 00	
Importation	387 00	
		<hr/>
		976 00

Sales:

Confiscated skins	\$86 17	
Ducks — Brownsville farm	28 75	
Fish — Sodus point	1,100 58	
Oil barrels	3 20	
Engine — old	50 00	
		1,268 70
Special protectors' badges.....		19 00
		<u>\$329,206 68</u>

HUNTING LICENSE FEES

The Commission is in receipt of continual requests from town and county clerks to endeavor to have the hunting license fee for residents increased to \$1.25, so that the clerks may retain twenty-five cents for their own fee, instead of the ten cents now provided. They have pointed out that the labor and care necessary to properly handle the hunting licenses is much greater than that required for other work that is better compensated. This is particularly true in the case of licenses that are sent by mail, when the applicant does not appear personally. In such cases the clerk frequently disburses more money, in stamps and stationery, than the ten-cent fee that he receives and uses his time besides. Even when the applicant appears in person, the fee is insufficient to cover the time and cost of issuance, making returns to the county clerk and the Commission, returning stubs, distributing digests of the Conservation Law, obtaining new buttons for applicants who have lost theirs, and answering the really considerable volume of correspondence that is naturally addressed to them because they issue the licenses.

In submitting this subject to the legislature, the Conservation Commission thoroughly endorses the request of the town and county clerks for this small increase in their hunting license fees.

FISH AND GAME LAWS

The fish and game laws have continued to work very satisfactorily throughout the year, and the Commission feels that comparatively few changes are needed. The fact that New York State has a codified system of fish and game laws, which are generally conceded to be the most logical and effective of those of

any state, is evidence that they should be altered as little as possible. This is true because they are meeting the purposes for which they were drawn. The Commission feels that a few minor changes are necessary, such as a modification of the sections regarding open seasons for certain migratory birds, to make them conform to the regulations under the Federal migratory bird law.

Orders for Increased or Decreased Protection. The law now makes it possible to meet any serious decrease in the number of any species by giving the Commission authority to order additional protection. The Commission also has power to decrease protection when a species is becoming destructive to crops or property. These orders are published each year in the annual compilation of "The Conservation Law in Relation to Fish and Game," except in those cases where the order is issued after the edition goes to press and terminates before the next one is issued. The Commission's action regarding petitions for such orders during the past year has been controlled partly by war conditions, since it has been considered desirable to permit the fullest possible utilization of fish and game for food purposes without impairing future supply.

The Commission feels that orders for additional or decreased protection, which are exceptions to the general laws enacted by the legislature, should be as few as possible, should be based upon careful investigations in each instance, and should be resorted to primarily as emergency measures. That is the theory under which the legislature has authorized the Commission to issue such orders, in the interest of needed elasticity in the fish and game laws. This has guided the decisions in a number of instances.

An order was issued in September to shorten the season and reduce the bag limit on ruffed grouse, for reasons that will be covered on another page under the head of the Game Census.

On account of the food shortage, due to the war, the Commission reduced the fees required for certain licenses to take fish. These reductions are specified in detail in the report for the Bureau of Inland Fisheries.

GAME PROTECTION

Policy. Effective game protection involves two major factors, one of which is just, impartial and rigorous enforcement of the



New York's uniformed and trained Game Protectors are the most effective conservation police in the country.

law, and the other the development of cooperation on the part of the public. During the past year important steps have been taken under both of these major heads.

The steady development of the game protective force during the last ten years has had rather more emphasis placed upon it than the development of public understanding regarding game protection and the enlistment of cooperation. The two lines of endeavor should run side by side, and the Commission has accordingly instituted a number of new measures to accomplish this object.

The use of posters in the forest preserve counties, as a means of public education regarding the proper use of the forests, has been found for years to be a most valuable method for developing cooperation. Until recently, however, posters have not been employed in the Division of Fish and Game. Because of the success attending the forestry posters, a special poster on the protection of the elk was issued after the liberation of a carload of elk in the Adirondacks two years ago, and has done much to point out to hunters the difference between elk and deer and enlist their interest in protection of the elk. At the beginning of the hunting season in 1917, a small poster bearing as its chief feature the words "Look Before You Shoot" was placed in all parts of the Adirondacks and Catskills as a protection both to human life and to the doe deer. In the spring of 1918, the legislature passed the nonresident angling license law. In order that every person might have full notice of this new requirement, the Commission issued a poster in the form of a notice to fishermen, calling attention to the requirements of the law. This poster was put up everywhere throughout the state, in hotels, railroad stations, post-offices and on trees about the shores of streams and lakes. Still later in the year a poster was prepared to carry the appeal to sportsmen and farmers to "Help Wild Life To Do Its Bit." It developed the idea of conservation of wild life as a wartime measure, and was designed to emphasize some of the real reasons behind the conservation laws. This poster has been used everywhere throughout the state with excellent results.

New motion picture films have been taken this year on different phases of game protection, and are being shown in the theatres of the state.

The Commission has conducted a consistent educational campaign in the press regarding game protection, and has taken every step possible in this and other directions to safeguard wild life by the development of a proper appreciation of its value and of the consequence of disregarding the law. It is guided throughout this work by the idea that its chief function is to protect wild life, rather than to bring violators to punishment, and that the second and more drastic measure should be resorted to only when the first is not effective.

The Commission considers a rigorous enforcement of the law to mean the bringing of violators to accountability for their offenses to the fullest extent possible with a highly trained and efficient body of game protectors. It must unquestionably mean that if a man has violated the law every effort of the Commission must be exerted to impose upon him the punishment specified by the law, with only such leniency as the circumstances and statute justify. Nothing will instil greater respect for the law into the minds of possible violators than the definite knowledge that there is an effective force of wild life protectors who will use every proper effort to compel them to account for their offenses. The Commission believes that the sooner this is thoroughly comprehended by all violators, just that much sooner will violations materially decrease.

Impartial enforcement of the law is a simple phrase which every one understands. Persons occasionally appear who profess to misunderstand its direct meaning, and wish to work it out in some way by indirection. An analysis of the monthly lists of game law violations in the office of the Commission will make it clear that the game protective force understands the meaning of impartial enforcement of the law. Here again it is appropriate to say that the better it is understood that the law is impartially enforced, the sooner will violations cease by persons whom one would least expect to be tempted to commit such violations.

In April, 1917, the publication of a monthly statement of game violations was begun. It gave a list of violations by nature and by counties and showed the amount of recovery. It was very widely used in the newspapers each month, but the Commission was continually asked for the names of the violators that the

statements covered. It was accordingly decided in June, 1918, as a result of these requests, to expand the form of the violation statement and give the name of each violator, the offense for which he settled or was convicted, and the amount of the recovery. The publication in the newspapers of the portions of the statement referring to each county has increased materially since that date. The result of publishing this statement has emphasized the truth of assertions frequently made that many violators have little objection to paying fines for misdemeanors, provided they can escape publicity. Since the publication of names was instituted, the Commission has had repeated offers of uncontested settlements upon condition that the names be withheld from publication. It has, in every instance, refused to accede to such requests, and has adopted as a fixed policy the publication of this information regarding every person who settles for a violation or is fined.

There are, of course, frequent infractions of law that are mere trivialities, technical violations of no consequence, that should never be prosecuted. Just enforcement of the law involves recognition of this principle. Examples of such cases are those against minors, where reprimand is better than punishment. Division inspectors and protectors are instructed that they must bring no trivial cases, and that they must prosecute only when they are fully convinced of the guilt of the person prosecuted and have actual evidence which they believe sufficient to obtain a conviction. The fact that the Commission successfully prosecuted or settled 3,209 cases during the calendar year 1918, and that there were only 40 acquittals, is in itself sufficient indication that the policy of the Commission in this respect is that of a thoroughly just enforcement of the law.

Administration and Rating. Once each month a meeting of division inspectors is held in the office of the Commission for the purpose of receiving detailed reports on the month's work and discussing administrative matters relating to each division. The subjects discussed at these inspectors' meetings are in turn, where pertinent, brought to the attention of the protectors at regular block meetings held in each division. The purpose of these meetings is to develop the individual protector, to give him a proper knowledge of his duties and of law and procedure, and

to thoroughly acquaint him with the policies of the Commission. As a result of this system of development, and of keeping close check upon the work of every individual, it is possible for the Commission to rate the protectors with a very detailed knowledge of the capabilities of each man.

The ratings are worked out upon a percentage basis, the chief factors entering into the determination and the relative weights assigned them being:

Efficiency	6 points
Number of cases reported	2 points
Recovery in cases reported	1 point
Days worked	1 point
	<hr/>
	10 points.
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Efficiency, which is the largest and most important factor, is determined by:

Initiative	25 points
Quality of work	20 points
Knowledge	25 points
Conduct	30 points
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	100 points
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These four points are worthy of special explanation.

Initiative. This is based upon the ability of the protector to set conservation matters in motion.

Quality of Work. This is based on the ability of the protector to secure competent evidence; skill in drawing legal papers in court proceedings; investigations of complaints and conditions; and reports on assignments.

Knowledge. This is determined from the knowledge the protector displays of the Conservation Law, the Protectors' Manual of Instructions, and the life and habits of the fish and game generally, but more specifically those native to his immediate territory.

Conduct. This is based on courtesy to the public, the tact displayed in interviewing witnesses, attention to duty, willingness to work, and obedience to orders.

From this explanation of the more fundamental points covered in the rating of the protectors, it is clearly apparent that it is the policy of the Commission to give less emphasis to those details which will always speak for themselves, such as the number of days worked, the number of cases reported and the recoveries, and to place the major emphasis upon those factors which are less apparent on the surface. The details upon which the greatest stress is laid are those that will not appear unless the protector is making every effort to practice not only the letter but also the spirit of the conservation of wild life as it is understood and practiced by the Commission.

It is the policy of the Commission to place only protectors of the highest type in the first grade — the men who display executive ability, knowledge, tact, common sense and enthusiasm, and who are fitting themselves for higher positions. In accordance with this system of rating, which has been only briefly covered above, 45 men are now in the first grade, 34 in the second and the balance in the third.

The system of rating and the increased compensation provided by legislative appropriation for men making the first and second grades, together with possibilities for promotion, foster a rivalry among the protectors which goes very far toward making them, as they are conceded to be, the most efficient body of game protectors in the country. The men have all been brought together in Albany twice during the last three years for a convention and discussion of game protective problems, and these meetings have given them a greater solidarity and *esprit de corps*. The offering of prizes for efficiency in revolver shooting, similar to the prizes offered to the police force of many cities, has also stimulated a rivalry and served to knit the force closer together in its common work. It is significant in this connection that the average score for the first month's shooting contest in July, 1917, was 7.78, whereas in June, 1918, a year later, the average had risen to 21.88, approximately three times that at the beginning of the contests. At the end of that year a cup for the division making the highest average for the year was awarded to the Southern Adiron-

dack Division, to be held for one year, and individual medals for marksmanship were awarded to Protector W. L. Waterhouse for high record, Protector Alvin Winslow for second, and Protector E. R. Ganey for third.

Uniforms. Game protectors have now been uniformed for two successive years, so that there has been ample time to carefully appraise the results. The benefits have been clearly apparent with the men themselves, but of no less importance has been the effect upon the general public. It has been so often demonstrated in other police organizations that the authority and prestige of an officer are increased by the adoption of a uniform, with consequent increase of his effectiveness, that it is surprising that uniforms were not sooner adopted for the game protective force. It is now realized as never before that the state has a body of men whose time is being given continuously to the protection of wild life, and that they merit public cooperation. If the men had continued to go about in civilians' clothes, no one whom they met, except their own acquaintances, would have realized that they were actually about in every community day by day. This fact is now understood by more people than ever before, with the very gratifying result that the protective force is meeting with a more widespread cooperation than it has ever before experienced.

That the effectiveness of the protectors is not curtailed by the uniforms is shown by the steadily rising number of convictions since the uniforms were adopted. The uniforms help materially in many instances, paradoxically, because they are taken off and the men work in plain clothes, while the violators are watching for men in uniform.

In attending to all official business that does not necessitate concealed identity the uniforms are required, and the Commission insists that they be kept in good order. Inasmuch as their value has been so well demonstrated, and they entail additional expense on the men, the Commission feels that the legislature would be well justified in making appropriation for their cost, when they need replacement from time to time, and accordingly makes this request.

Protection of Song and Insectivorous Birds. Special efforts have been made to check the killing of song and insectivorous birds during the last year. The work has not been confined to any

one locality, but has centered chiefly around the cities where a large foreign population is found. Special emphasis has also been placed on the importance of protection of birds in the educational work of the Commission.

Dr. E. P. Felt, State Entomologist, has said that "a considerable reduction in bird life since about 1898 appears to have been followed by increasingly frequent and severe defoliations of forest areas." With the increased protection that the Federal Migratory Bird Law now gives to birds over nearly their entire winter and summer range, and the better game protection of the last few years, they are on the increase in New York.

Enforcement of the Shellfish Laws. The law prohibits the taking or possession of lobsters less than four and one-eighth inches in length on the carapace, and of female lobsters in spawn or with eggs attached, and of scallops less than one year old. All of these regulations of course rest upon the strongest biological foundation, the reason for the size limit of the lobsters and age limit of scallops being that those under it have not reproduced. Widespread violations of all of these regulations led to special work for their enforcement during the latter part of the year. Soon after it started, the Commission issued a warning through the press, which was very generally published in the newspapers of New York city and Long Island. It apparently had little effect, however, since the number of cases obtained has continued unabated. Many of the violators are now endeavoring to cover their operations, and more careful work is necessary to detect them. This work will be energetically continued because of its importance to the shellfish industry. At the end of the calendar year a total of 294 cases had been fined or settled.

Traffic in the Plumage of Protected Birds. For many years the Commission has carried on special work to check the traffic in the plumage of protected birds, particularly the plumes of egrets. Most of the work has been done in New York city, where for a long time the traffic was practically uncontrolled. The dealers in these plumes have at last been driven to cover, as a result of the Commission's work, until they now operate with all of the stealth of traffickers in illegal drugs. Their detection accordingly requires the most careful detective work. Many of the plumes are smuggled into the country, and every trick is

utilized to cover the trail of their passage from hand to hand, until they finally reach the wearer.

One has only to walk about the streets with his eyes open, noting the number of egret plumes in hats, every one of which represents a violation of the law when it was sold, to realize the extent of this illicit trade. When it is understood that the feathers are the bridal plumage of the birds, and that the killing of the parent bird means the starvation of a nest of fledglings, it is not difficult to appreciate why the plumes are called "The White Badge of Cruelty," and to comprehend the motive of the Conservation Commission, the Audubon societies and every lover of beautiful and useful bird life in attempting to stamp out the traffic.

The law now in force prohibits the sale or possession for sale of the plumage of protected birds, but it does not prohibit their possession for purposes other than sale. Whenever cases are obtained, it is accordingly necessary to prove a sale, or possession for sale. It is recommended that possession itself be made illegal, regardless of the purpose. The mere wearing of the feathers on the street would thus be illegal, and the law would instantly and automatically terminate the traffic. The principle that birds should be protected has long been established in the law, but enforcement has been difficult, and in many instances nearly impossible. Possession of protected game is prohibited except at certain times, and the prohibition gives real strength to the law. The plumage law should be given a similar strength, in the interest of the useful birds that it is intended to protect.

Pollution Cases. The law prohibiting the pollution of streams to an extent detrimental to fish life or to the propagation of fish has until recently been thought to be very inadequate. A study of pollution carried on during the last summer has proved, however, that the difficulty in prosecuting cases of violation of the law is not so much a legal difficulty as a biological one. In other words, if it can be proved biologically that certain cases of pollution are detrimental to fish life, the law is in most respects adequate to care for them. The Commission's difficulty with such cases arises from the lack of a biologist who has made a special study of aquatic life. The summer's work has demonstrated that such a man would be able to marshal evidence regard-

ing the evil effects of much of the pollution of the state and thus abate a great part of it. Lacking that biologist, the Commission is able to proceed in no cases except those very clear ones where minnows introduced into the polluted water die in a short time, thus giving direct, visual evidence of the toxic quality of the water. Thirty-five cases of this sort have been settled during the calendar year, and a number of others since then. It is seldom necessary to take them to court, because of the convincing character of the evidence.

Aside from cases of this clear kind, there are an enormous number of others involving chemical and economic considerations of much complexity. Many of the biological and chemical questions can be worked out with proper assistance. The Commission recognizes, however, that to proceed too precipitately with the elimination of every case that can be adjudged detrimental to fish life would impose an undue hardship upon industries. This does not at all mean that the attempt to clear up pollution should be limited, but rather that it should proceed with proper regard for industry as well as for the right of the public to natural and productive watercourses. It has been demonstrated that much of the pollution can be eliminated by disposal works, and a great deal of it can be converted into profitable by-products. Funds should be provided to investigate these problems and to work them out upon a cooperative basis with the industries affected, that the law may be enforced with as little industrial hardship as is consistent with getting results.

Enforcement of the Deer Laws. Apparently authentic reports of wholesale violations of the deer laws in the Adirondacks caused the Commission to detail a number of protectors upon secret service work in the season of 1917 and again in 1918. The carefully substantiated evidence of conditions in the deer forests, turned in by these men, is nothing short of astounding. No good will come from blinking at the facts. Practically every possible violation of the deer law was encountered by the protectors, and not once, but repeatedly. The men were instructed to find board at camps where the Commission had reason to believe that violations were being committed, and their cases were accordingly drawn chiefly from among the hunters at those camps. Nevertheless they ascertained that the conditions observed by them

personally were sufficiently general throughout the woods to constitute a genuine menace to the continuance of deer in the Adirondacks, if permitted to go unchecked.

The Commission is taking vigorous action against the violators of the deer law, by prosecutions and settlements, and also by the widest possible publicity, in the belief that the remedy rests with the public no less than with the game protective force. In accordance with this theory it desires to point out here some of the broader features of the situation.

The most regrettable fact brought out in the entire investigation was the determination on the part of large numbers of hunters to shoot anything that they saw, regardless of sex or age, and to shoot as much as they could, regardless of the bag limit. If one killed more than his legal number of deer, he divided with others, while if one killed an illegal deer, either doe or fawn, he skinned it and took the meat. Dogs were in common use in camp after camp, and whole deer and parts of them were continually bought and sold. An analysis of the violations thus reveals that they were due not to dissatisfaction with any one law, but to general contempt for the Conservation Law *per se*. The protectors were all required to report whether the hunters in the camps to which they were assigned operated on the general plan of killing practically anything that they saw, and more than two-thirds of the protectors answered this question in the affirmative. The result of this determination is shown in 101 deer that came within the protectors' immediate knowledge — in most cases under their personal observation. 46 were bucks, 44 were does, and 11 were fawns of both sexes. It was a matter of great interest in one camp that one man had killed eight does in the season, while another at the same camp, by a singular coincidence, had killed eight bucks.

There were many more illegally killed deer than those mentioned above, regarding which the protectors obtained evidence that resulted in settlements or convictions. Cases arising from the 1917 work were settled for \$3,511.50. They involved 79 individuals and more than 125 violations. Already in 1918, 38 cases have been settled, with a total recovery so far of \$4,245.00. The 1918 cases alone will number between 200 and 300 when all have been closed.

The Commission wishes particularly to point out that the violations of the deer law involve no particular class or locality more than another. Men of all walks of life are involved, and even some women who deliberately stood upon runways in wait for deer that were being run by dogs. Efforts to correct the old, outworn point of view regarding wild life — a point of view that would make game the property of whoever can get it, regardless of law — must accordingly be directed to every class and locality.

The inadequacy of the usual method of game protection was thoroughly proved by the secret service force. Codes were used over the telephones, and the regular protectors were heralded in the camps long before they arrived. Until they were known to be somewhere else, the lid was on. One man of position said that he would not be caught with the doe that he had for a thousand dollars — said it to a member of the secret service force. Another man asked two hunters who took two does home in trunks if the protectors had caught them — asked it in the presence of the secret service. Man after man hid his illegal kill — while the secret service looked on — and then returned for it after dark. It was a very jocose thing for one hunter to ask another, while a doe or a fawn was being dressed or hidden, what he would do if a protector should appear. These verbatim reports of occurrences and conversations are in the records of the Commission. The secret service was there — two men in each place — to see, hear, and record, and even to get buried heads and other corroborative proof out to Albany.

The Conservation Commission is proud of the fact that it has men of the ability and resourcefulness necessary to do this difficult work. It is confident that the people of the State of New York are quite as determined as the Commission that this situation in the deer forests shall cease, and for this reason goes to them with the record.

The Commission will be unremitting in its efforts to enforce the deer law, and will continue its educational work, in which the press is giving excellent co-operation. Knowledge of all the facts and a crystallized public condemnation of Game Law violations will do the rest. All three of those factors — strict

enforcement, education, and public co-operation — are exemplified in a recent newspaper editorial on "Secret Service Methods," which follows:

A leading Adirondack newspaper voices a sentiment not unusual in a region where game abounds with reference to the enforcement of the game laws. The paper objects to "game protectors who choose to play the sneaking game — hiding and waiting for sportsmen to break the law, then making the arrest, when the violation might have been prevented by the game protector advising the sportsman of what he could and could not do and still keep within the limits of the law."

There are folks who hunt and fish who are much cut up because there is considerable danger these days in violating the game laws. The game wardens and State police are not operating after the old fashion, which consisted principally of keeping off the grounds where laws were violated, or of allowing full warning being given of approach.

Of course, if protectors come out previous to an impending violation and inform the "sportsman" regarding the law, the protectors would never make an arrest, there would never be an example before the public, and every man would feel safe in violating the law, as he would know that if a protector had his eyes on him, the protector would come out with the warning.

"The sneaking game — hiding and waiting" is the best way that "sportsmen" violators may be caught. The open method succeeds only by accident. The United States secret service does not hunt counterfeiters and spies with a brass band, nor does a game warden force working at its highest efficiency tell and make known by its acts what it is doing.

The Conservation Commission by sending "plain clothes men," who pretend to be woodsmen or sportsmen, into the woods after violators have reaped rich hauls and have thrown fear into the hearts of game hogs. When one never knows the real identity of those in the neighborhood, he is apt to play safe and refrain from violating the game laws. This fear is far more powerful as a preventive than any little lecture that game wardens might deliver to illegal hunters and fishermen — *Utica Observer*.

GAME BREEDING

During the fiscal year ending June 30, 1918, 159 licenses were issued for the production of game in captivity. This is 16 less than the number issued for the year before, but a gain of 14 on the year before that. It is thus apparent that in spite of the country's intense activity in war matters during the last year, game breeding has been more extensive than before the war. Work of this sort can be made very attractive to returning soldiers and the Commission anticipates that the trend toward out-of-door pursuits, after the war, will result in a very material increase in this direction.

Pheasants in a laying pen at the Sherburne Game Farm. 11,415 live birds were shipped to applicants from the three farms in 1918.

Approximately 60,000 pheasant eggs were distributed to applicants for hatching during 1918.



THE GAME FARMS

The year has been a very successful one in the number of live birds distributed from the three State game farms, the total distribution amounting to 11,415. This is a gain of 2,274 over the preceding year. There was a slight falling off in the number of eggs distributed to applicants, the total number being 59,318. The decreased number of eggs distributed is largely accounted for by the increased number that were retained on the farms for rearing purposes.

It is desired to emphasize again that the policy under which the State's three game farms are operated is that of producing genuinely wild birds, rather than birds reared under conditions that make them practically domestic fowl. The New York State farms are all of large size, each containing approximately 200 acres, and so arranged that it is possible to give the birds the utmost liberty, under conditions that will develop every wild trait. The effect of this is to produce birds that not only have the wild instinct, but also are of much more hardy physique than those reared by other methods.

The farms are constantly experimenting to devise methods for increasing the output. These experiments are taking the direction of artificial incubation, artificial brooding, and the raising of sufficient insect food to carry large numbers of birds. While much remains to be done in all of these directions, the Commission is glad to report that very satisfactory progress has already been made in methods of incubation and brooding. The raising of insect food is a very difficult, scientific problem, in the solution of which a number of independent investigators are cooperating with the Commission.

During the year a large amount of grain and other produce necessary for the rearing of pheasants was raised on the farms, thus cutting down the expense. So far as possible, all of the food required for the birds is produced in this way.

In the stocking of the State with ring-necked pheasants much emphasis has been placed in the past on the closing of counties against pheasant shooting for a period of years, the closing being accomplished by an order of the Commission giving additional protection. An analysis of such orders for years back has shown

that one county would be closed one year, throwing the hunters of that county over into an adjoining county for pheasant shooting, while the next year the second county would be closed and the first county opened, with a resulting excess of hunting in the first county. The Commission has accordingly come to feel that it is a much better policy to give additional protection to pheasants, if it is given at all, in entire groups of counties, in such a way that the benefits cannot be immediately nullified after the protection is removed.

The advisability of additional protection to pheasants appears questionable, except in unusual cases, in view of the three large game farms which are maintained by the State for stocking covers with these birds. With an annual output of about 60,000 eggs and more than 10,000 live birds, it should surely be possible to maintain enough birds in suitable localities to permit four days of hunting during a single season. If that much hunting cannot be permitted, the remedy is not additional protection. It may be that in such cases the climate or locality is not suitable for the birds, or the sportsmen and farmers are not giving sufficient attention to stocking, or possibly are pursuing incorrect methods in hatching, or the law is not sufficiently respected in those places. The remedy would thus seem to be abandonment of any attempt to maintain pheasants in certain places where natural conditions are unsuitable; or to give increased attention to stocking on the part of citizens of favorable localities; or to carry on more intensive educational work regarding methods of incubation and liberation; or to develop more cooperation between the citizens of the locality and the game protective force.

The Commission is studying the localities most suited for pheasants, from the standpoint of natural environment and results already obtained. It has also produced a motion picture film on the technical details of hatching pheasants, and is doing other educational work to make the stocking as effective as possible. It is believed that these steps, if they meet with cooperation on the part of the farmers and sportsmen, will be much more effective than continual modification of the open season.

CAMPAIGN AGAINST VERMIN

The great increase in the numbers of predatory birds and animals throughout the State during the last two years has brought about the necessity for a vigorous campaign of extermination of vermin. A careful investigation of the grouse situation, which led to the conclusion that the shortage of grouse was largely due to the prevalence of predatory birds and animals, gave added emphasis to this subject. The Commission has accordingly adopted a number of measures which should be effective in the course of the next two or three years.

The game protectors have all been equipped with 25-20 calibre Winchester carbines, and have been instructed to carry these rifles with them at all times when in the field and to use them for the killing of vermin. The rifles will have a twofold effect. First, they will make possible the killing of an appreciable amount of vermin by the game protectors themselves, and this will naturally increase as the men become more and more proficient in their hunting. The employees of the United States Biological Survey wage a constant campaign upon predatory animals in much the same way, and figures published by them show that during the last year 1,335 predatory animals were killed. These animals included chiefly coyotes and other species detrimental to stock raising in the southwest. When it is considered that our own protective force killed 1,012 predatory animals and birds, of species that are most destructive in New York State, during the six months from July 1 to December 31, 1918, it must be felt that a very creditable showing has been made.

The second effect of the rifles will be to emphasize to every hunter whom the game protectors meet afield that unremitting warfare upon predatory creatures is necessary.

The Commission is endeavoring, by educational means, to institute a universal campaign against vermin among sportsmen. The back of every hunting license issued in 1919 bears the words, "Enlist in the Campaign Against Vermin," and contains also the following exhortation to sportsmen: "Shoot all you can of foxes, cats hunting protected birds, harmful hawks, red squirrels and other enemies of useful wild life. You will benefit both the game and your own sport."

The Commission now has in preparation a publication, the title of which is "Friends and Foes of Wild Life." It describes all of the species that are most destructive to useful wild life and contains a colored plate of those species, drawn by Louis Agassiz Fuertes. Another colored plate and the descriptive text point out the difference between these species and useful ones that it is not desirable to kill. The two colored plates are respectively called "The Black List" and "The White List." This publication will be widely distributed among sportsmen.

GAME CENSUS

Continued reports from game protectors on the more important species of wild life have been required throughout the year. Reports are made by the protectors each week, the primary object being to have a record of what the men see in their work afield. This record is then analyzed and interpreted in the office of the Commission. The necessity of reporting their actual observations develops greater power of observation in the men and gives them a much better knowledge of the wild life of their districts, as a basis for generalized reports from time to time. Generalized reports are required only when the Commission has some special subject under investigation. The game census has now been carried on for more than three years, and reports of results have been made from time to time. Some of the more important conclusions reached during the last year are contained in the following paragraphs.

Ruffed Grouse. A very serious shortage in ruffed grouse has been reported throughout the State for the last two years, causing the Commission to make a very careful and comprehensive investigation of the entire grouse situation. The results of this investigation were published in a special bulletin. The study showed that the grouse shortage was caused primarily by natural causes. Among these may be mentioned a succession of very cold, wet nesting seasons, resulting in a tremendous mortality among young birds. There was also a great influx of predatory birds from the north, caused by the periodic shortage of varying hares or snow-shoe rabbits. This periodic rabbit shortage comes in cycles of from seven to ten years. Inasmuch as the predatory

birds of the north, chiefly the goshawk and great horned owl, subsist mainly upon the rabbits, the shortage of rabbits in the north has caused the birds to migrate southward in search of food. They find the grouse an easy prey. The great horned owl or goshawk will mark down a convoy of grouse and stay in the immediate locality of that convoy, taking off bird after bird until he has completely exterminated it.

The shortage of snow-shoe rabbits in the Adirondacks, which occurs at the same time that it does in the far north, also causes the predatory animals of that region, such as the foxes, to turn to the grouse as the most available food. It is possible, also, that it causes some of the foxes of the deep woods to spread southward in search of food. This would help to explain the greatly increased numbers of foxes in the more settled sections, though it is possible also that a decrease in the hunting and trapping of foxes has been partly responsible for their greater numbers.

The Commission found that the shortage in grouse existed in the remote sections of the Adirondacks, where the birds are not hunted at all. It was accordingly felt that the scarcity was due more to predatory animals and to unfavorable nesting seasons than to the hunters themselves. In fact, it was felt that hunting was one of the minor factors in the decrease of the birds.

The last nesting season was very much more favorable than the three that preceded it, and reports of game protectors from all over the State show that considerable numbers of young birds were reared.

The Commission was accordingly guided by all of these facts in acting upon petitions for additional protection. An order was issued shortening the grouse season to the month of October alone in the State at large, and to the single month of November on Long Island, and cutting the bag limit to 2 in a day and 10 in the season. This permits some hunting and enables sportsmen to keep their dogs in training. Inasmuch as the leaves are on the trees during October, so that hunters cannot kill very many birds, it also very materially increases the protection given to grouse, and allows the larger proportion of them to be left for a breeding stock next spring. The grouse situation is being very carefully watched by the Commission, and any action necessary will be taken, as provided in the law.

Fur Bearing Animals. During the year the Commission has collected some very interesting statistics regarding the number and value of fur bearing animals taken in the State. This data, however, did not give any general summary, and, accordingly, in an effort to ascertain the total fur yield, Mr. John M. Cooper, of Bainbridge, a member of the New York State Fur Dealers Association, who has made a special study of the New York State fur yield, was asked for an estimate of the State's total catch. His tabulation of animals taken, the average price paid and the total value to the trappers of the State, from November 10, 1917, to April 20, 1918, is well worth thoughtful study. It is as follows:

New York State Furs Taken in 1917-18

	Average price per skin	Totals
250,000 skunk	\$3 50	\$875,000
2,000 mink	6 00	12,000
3,000 raccoon	2 50	7,500
3,000 red fox.....	13 00	39,000
200 gray fox.....	2 25	450
15 cross fox.....	15 00	225
2,500 ermine	70	1,750
300,000 muskrats	82	246,000
300 opossum	80	240
40 bear	12 00	480
50 fisher	25 00	1,250
35 otter	25 00	875
35 sable	4 00	1,200
1,000 house cat.....	15	150
Grand total		<u>\$1,175,320</u>

It must be understood that this value of \$1,175,320 is only a small part of the value of the fur yield to the industries of New York State. Fur is bought from the trapper by the middleman or wholesaler, tanned in the tanneries, made into garments by the manufacturer, sold to the dealer and then retailed to the user. At every step labor is employed and profits are made. While, of course, some of these steps are taken outside of the State, nevertheless, many of them are taken within our borders.

The above facts all emphasize the importance of careful attention to fur bearing animals on the part of the Commission and the Legislature. This does not mean that the legitimate interest of the sportsman in taking certain animals for sport and food should be overlooked. In many instances the laws regarding certain species must be a compromise between the sportsman and

the trapper. Sometimes also they must represent a compromise between the trapper and the farmer, as in the case of the ubiquitous skunk, the reason for whose protection is better understood in the light of an annual value of more than three-quarters of a million dollars for his raw fur.

The high price paid for the skins of these animals is doing much to keep their numbers down to within reasonable bounds. As this report is written, a prime skin of the red fox, for instance, is selling at from \$20 to \$25. Bird lovers will regret that the skin of the common house cat brings a price of only fifteen cents, whereas the harm that it does to the useful birds, that are so necessary for agriculture, undoubtedly far exceeds the damage done by all other fur bearing animals combined.

Deer. Special attention has been given throughout the year to the number of deer seen by the protectors as they have gone about on their regular patrol work. The game census was started in August, 1915, and, accordingly, when a new summary of deer statistics was made on July 1, 1918, this summary gave records for approximately three years. Every deer seen by a protector during that time has been reported on cards ruled to show whether the deer was one whose sex was not determined, whether it was a buck, a doe without fawns accompanying it, a doe whose fawns were seen with it, or whether it was a fawn. A total of 18,549 observations was recorded up to July 1, 1918. An analysis of the observations accordingly gives a very accurate statement of the relative proportion of the sexes among the deer. If only a few observations had been made, no general conclusion could be reached. In the case of these figures, however, it should be understood that as the deer moved naturally before the eyes of the protectors, during all this time, more than 18,000 observations were made upon them, thus eliminating any possible errors that might arise in a limited number of observations extending over a short time. This is in accordance with sound statistical rules.

In the 18,549 observations it was possible to positively determine the sex in 7,103 cases. In the remainder the deer were too far away, or foliage intervened, or the bucks were not in horn at that season, making their recognition difficult, or for some other reason sex identification was impossible.

These 7,103 observations showed 2,530 bucks and 4,573 does. This is a proportion of more than one buck to two does.

A further analysis of observations, section by section, shows that the proportion of bucks to does varies slightly in some places. For instance, in localities that are hunted very little, there are very nearly the same number of bucks as does, whereas, in some of the outlying sections that are hunted most, the ratio is sometimes as high as one buck to from three to four does. Inasmuch as it has been thoroughly established in deer parks that one buck to four does will in no way endanger the maintenance of the herd, it is thus clear that the buck law in New York State is operating in the interest of increased numbers of these animals.

During the last year the secret service work of the game protectors has given added confirmation of the fact that the proportion of bucks to does is thoroughly satisfactory on biological grounds. The secret service work, as it applies to game protection, has been discussed on another page, and it was pointed out there that in camps that operated upon the plan of killing practically everything that they saw, the sex of 101 deer reported killed was 46 bucks, 44 does and 11 fawns. These were deer that came, in most instances, under the immediate observation of the protectors. Because of the fact that the hunters at those camps shot at everything that they saw, and determined the sex afterward, it is possible to reach no other conclusion than that the proportion of bucks to does in those places is thoroughly adequate.

Up to the time of writing this report, the Commission had made settlements with some of those violators, that involved 23 deer. Of these 23 deer, 9 were bucks, 12 were does and 2 were fawns. The settlements were based upon a large number of affidavits presenting a great amount of corroborative proof, showing that no attempt was made to distinguish between a buck and a doe, until after it was dead on the ground. This kind of evidence gives the strongest sort of proof that the relative proportion of sexes in the deer forests is entirely satisfactory, whatever may be said about the desire of some hunters to observe the law.

The Commission desires to place particular emphasis upon the records of deer killed, as turned in by its secret service force, as an indication of what would happen to New York's deer if there were no buck law on the statute books. Out of 101 deer, 44

were does, despite the fact that their killing was illegal; 11, or more than 10 per cent, were fawns. If the deer law should be amended so that hunters may take one deer of either sex, the Commission is firmly convinced that the increased slaughter of the breeding deer, which would immediately follow, would result in the rapid extermination of the whitetailed deer from New York forests in the same way that its relatives, the elk and the moose, have gone before it.

Reports made to the Commission show that approximately 37,000 men hunt deer each season. A careful estimate of the total number of deer in the State, district by district, shows that the approximate number of deer in the State is 50,000. With 37,000 men hunting 50,000 deer, under a law which would permit the killing of either sex, the only question that could arise would be that of the number of seasons that could elapse before the last deer would be gone.

Even with the buck law on the books, the building of improved roads and the turning of increased numbers of hunters to the Adirondacks introduces difficult problems. One of these is that of game protection, which must be tremendously intensified if the ancient hunting grounds of the Iroquois are to remain stocked with any big game. The Commission is taking the most energetic steps to intensify the game protective work, as is indicated on another page. The investigation that it has made of the deer through its game census system proves that there should be no let down in the legal safeguards.

Hunting Accidents, the Buck Law and Law Enforcement. In connection with the game census, the Commission has collected statistics of hunting accidents and the working of the buck law that are of the utmost significance. They are drawn from many sources and show with unfailing uniformity the results of this law as it has been applied in state after state.

Besides protecting the breeding deer, the buck law, when it is properly observed, is one of the greatest safeguards of human life that can possibly be provided for the rapidly increasing number of hunters who throng the woods during the open season. For six years prior to the passage of the buck law in New York State, the number of men killed in mistake for deer was 14. In the four years that immediately followed the passage of the law there were

7. Figures compiled by the United States Biological Survey for a period of ten years show that in five states where does were allowed to be shot, the number of persons killed in mistake for deer was 138. For the same ten years the number killed in mistake for deer in five states that had a buck law was only 27.

For the four years between 1911 and 1914 in Wisconsin, when deer of either sex could be lawfully shot, the number of hunters killed in mistake for deer ranged from 12 to 24 annually, while the number injured ran from 14 to 31. In that state for those four years the practice of shooting at anything that moved, without looking for horns, was responsible for a total of 81 deaths and 96 injuries. In the first year of the buck law, the only one for which figures are available, none was killed and none was injured in mistake for a deer.

It is perfectly clear, however, that the buck law cannot protect human life unless it is observed. Witness four cases in New York State during the last open season, two fatal and two nearly so.

1. A man and his guide were hunting in the vicinity of Star Lake in the Adirondacks. The guide was in a stooping position, when the hunter, believing that he saw a deer, shot the guide through the stomach and spine. The guide died soon after. "The hunter mistook his guide for a deer," said the game protector who reported the case. He would not have done so, had he been sure that he saw horns.

2. A Mineville hunter, seeing something moving through the bushes, thinking that it was a deer, and not waiting to make sure — not even waiting to make sure that it was a deer, and regardless of whether it was buck or doe — fired his rifle at it and wounded a fellow hunter of his own village.

3. An automobile was running along a highway in the Catskills during the open season for deer when its occupants saw something moving in a field near by. They shot and severely wounded a man who was walking in the field. They then slowed down, but on seeing their mistake, put on full speed and disappeared. Night hunting from automobiles is a frequent occurrence, with no intention whatever on the part of the violators to look before they shoot. The game protectors are constantly patrolling at night to stop it.

4. Two young men, one of whom was wearing light colored gloves, were hunting in the vicinity of West Chazy. It was becom-

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**BEFORE
YOU SHOOT**

**Save Human
Life**

**Avoid Killing
Does**

CONSERVATION COMMISSION. ALBANY.

Human life will be saved and deer will increase when the precepts of
this poster are fully observed



ing dusk when one of them saw something white moving in front of him. Believing it to be the tail of a deer, he fired. The next instant the screams of his companions told him of the fatal mistake. The wounded hunter was removed to a hospital, but later died. "It only shows the benefit of the buck law, if all hunters would strictly comply with it," commented the game protector in his official report.

Years of careful statistical study prove conclusively that the buck law safeguards human life. That life is safer in the woods under the buck law is proved with unanswerable evidence when four cases in a single season in our own forests are directly traceable to disregard of that law.

An examination of the subject from this point of view confirms the feeling of the Conservation Commission that the secret service work upon deer law violations for the last two years, a discussion of which is found on pages 45 and 46, is not alone game protection, but also protection of human life. The buck law safeguards human life, and it must be rigidly enforced as a humanitarian measure.

If the law is not observed because of conscience, it must be obeyed because to violate it is made so dangerous by intensive game protection that the gain is not worth the risk. The Conservation Laws are the "rules of the game," and undoubtedly to break them is too commonly regarded not as a matter of conscience, but rather of outwitting the umpire. Nevertheless a study of hunting accidents proves that such transgressions can too frequently become a matter of conscience of the most tragic sort.

Each year the woods hold more hunters than ever before, and the time is not far distant when the number of men who hunt deer each season may even exceed the deer. The figures of the game census indicate this possibility. Under more strict observance of the buck law, however, the deer will increase, since the number of does killed even under that law has been not inconsiderable. The Commission is convinced that the law must be maintained and vigorously enforced, because:

First: The life of a single sportsman or guide is worth more than all the deer in the woods.

Second: The deer herd will be unable to survive the drain, if the breeding females are killed.

Reports from Hunters on Game Killed. The increased number of hunters in all parts of the State has year by year increased the difficulty of maintaining sufficient game, and has made it necessary to obtain the most accurate data regarding game conditions. It has been realized for several years that one of the most important details to be ascertained is that concerning the amount of game actually killed. With this information in hand, it will be readily possible to determine by the amount of game killed each year whether a given species is going up or down. To accomplish this the Commission has had printed on the back of the stub of each hunting license, for the year 1919, a blank form upon which every applicant for a license is required to state the number of birds and quadrupeds that he killed under his 1918 license, giving the information to the best of his recollection. All of this information will then be returned to the Commission with the license stubs at the end of the year.

With the license, the licensee will receive a small tally card upon which he can record the birds and quadrupeds that he kills under his 1919 license, as a basis for his report in 1920. The license and tally card will be delivered to the licensee in a strong manilla envelope.

This system will give the Commission practically complete information regarding the killing of game birds and fur bearing animals, since the number of licensees who do not take out licenses the following year is very small in proportion to the total number.

The Commission has already received requests from other States for full details regarding this system and understands that it will shortly be adopted in a number of the more progressive States.

REGISTRATION OF GUIDES

For a number of years the question of the registration of guides has been a topic of discussion throughout the Adirondacks, and the Commission is inclined to believe that the consensus of the better opinion is in favor of such a system of registration as the one that has been so successful in Maine, Canada and some of the western states. Registration would have a number of beneficial results, among which the most important are undoubtedly protection of the forests and game, and an increase in the convenience with which vacationists may make use of the woods.

Formerly one who came to be known as an Adirondack guide earned the title only after his knowledge of the woods and of fish and game was thoroughly proved. The establishment of a system of registration for guides would be a powerful factor in keeping the profession of guiding upon the high level that it is most desirable for it to maintain. Only those men should be registered who are thoroughly competent in woodcraft, and well versed in the knowledge of fish and game. This, of course, would not prevent a man not registered from guiding, but would result in the vacationists choosing, in most instances, the registered guides, whom they would know to be competent. The net result would thus be better protection of the forests and game because of the greater competency of the men doing the guiding and more satisfaction from the vacationists and hunters.

The Commission is convinced by the intensive work that it has been doing on deer law violations that the hunters themselves, who come into the woods from other parts of the state, are responsible in a considerable measure for the violation of the law by the men whom they employ. Evidence has been obtained that many of these hunters insist in advance upon a dog being provided, or upon hunting for does as well as bucks, and expect their guides to carry out their wishes. If the guides should be registered and be clothed with some legal authority, as they are in the State of Maine, and be subject further to the forfeiture of their registration certificates if they violate the law, or permit their parties to violate it, the guides would then be in a much better position as a class and as individuals, to take an independent attitude with those who do not wish to observe the law.

The Commission believes that no fee should be charged, but that registration certificates and badges should be furnished without charge by the Commission to men who comply with the regulations and show to the satisfaction of the Commission that they are competent guides. A list of such guides should then be published and revised at frequent intervals. Such a list widely circulated through all available channels would make it very easy for prospective vacationists to get in touch with experienced guides in advance of the trips to the woods. This would be a satisfactory arrangement on the part of both the guides and the vacationists.

The Commission is presenting the matter to the legislature this year in the hope that it will be fully discussed, not only in the legislature but also in the northern counties affected, and that such action will ultimately be taken as appears wise.

BUREAU OF INLAND FISHERIES

Licenses and Fees. The policy of the Commission regarding the issuance of licenses for nets, set lines, eel weirs, eel pots and spears has been much more liberal during the past year because of the food shortage, and licenses have been issued in every instance up to the fullest extent possible without endangering the continued supply of fish in the waters. The total number of licenses for the calendar year was 6,241, while the number of separate nets, eel pots, eel weirs, boats and lines that they covered was 8,333. The details are given in the accompanying table.

In an endeavor to make the fish of inland waters do their bit during the food shortage, the privilege of night fishing with seines and gill nets was permitted on special order in many waters where in former years this permission had not been granted.

The set line, which was authorized under license during the first year of the war, has become very popular and each year has seen a great increase in the number used, this increase ranging from approximately 1500 the first year to 4250 for 1918. The fish taken on set lines are of the coarser grades and the reports of fish taken show that each set line yields fish of the average value of approximately \$12.00. Some of the lines have taken as high as \$28.00 worth of fish. The set lines have been particularly appreciated by those who have been too busy to take time off for fishing, but have, nevertheless, been able to put out a set line at night and take it up in the morning.

Two general spearing orders were issued during the year. The first one was operative from January 1 to April 30, both inclusive, and permitted the taking of suckers, mullet, carp, bullheads and eels. This order was for the general public, without any restriction regarding waters, except that it could not be used in waters inhabited by trout. The second order permitting spearing was operative from May 1 to November 30, both inclusive, and per-

mitted the taking of mullet, carp, catfish, dogfish, bullheads, suckers and eels. The second order, like the first, excepted trout waters and also some other waters that it seemed unwise to open in this way on account of the large number of fishermen and campers who frequent them.

The receipts of the Bureau of Inland Fisheries in license fees for the fiscal year ending June 30, 1918, were \$22,193.70.

A reduction of license fees was made in several instances in order to encourage the taking of the coarser food fish. Fees for eel pot licenses were reduced from \$5.00 to 50 cents. A little later in the season the fee for eel pots below Verplank's Point, in the Hudson River, was entirely removed. Prior to the extension of the Commission's jurisdiction to this section of the river, there were no license fees at all for eel pots below Verplank's Point, and the Commission decided upon investigation that it would be unwise to impose any financial restrictions at this time. Accordingly licenses were required, but no fee was charged. A reduction was also made in the fees required for fyke nets in the Hudson river, the fee for which was worked out on a graduated scale and resulted in a larger number of this class of nets being used than ever before.

Fisheries Statistics. The complete figures for all of the fisheries operations are not available, but some indication of their tremendous importance may be gathered from the fact that in the New York waters of Lake Erie, in 1917, 3,400,000 pounds, or 1,700 tons, of lake herring were taken by all fishermen. These fish are exclusively food fish and the large quantity taken places additional emphasis upon the policy of the Commission to devote special effort to the stocking of public waters with the food varieties as well as the game fish.

The incomplete figures of the commercial fisheries now at hand show 3,043,966 pounds of food fish taken under license of the Commission, with a value of \$304,858.30. These figures, however, do not at all represent the total number of fish taken, but only those that have been so far reported to the Commission for 1917. A statistician who could devote his time to this subject, and handle it in the same way that it is handled by the United States

Bureau of Fisheries, could obtain information that would be of the utmost value in fish cultural work and the development of both the inland and marine fisheries of the State.

The Shad Fishery. The run of shad in the Hudson river in 1918 was unusually large. A statistician of the U. S. Bureau of Fisheries, with the cooperation of the Conservation Commission, made a detailed investigation of the catch, in the course of which every fisherman on the river was interviewed and a statement of his catch obtained. A summary of this data show that in New York waters alone 220,602 pounds were taken, with a value of \$44,784.00. New Jersey waters yielded 14,000 pounds additional, with a value of \$3,400.00. The total catch for the entire river was thus 234,602 pounds, valued at \$48,184.00. In 1917 the total catch for the river was only 43,384, with a value of \$6,540.

The catch of 1918 was more than five times greater in weight than that of 1917, and it had a value more than seven times greater. This increase is important enough to arrest attention. Some annual fluctuation is always to be expected, and it is common enough to experience unusual seasons with any species of fish. This increased run, however, coupled with the fact that for a few years fishermen have been letting their gear run down and go out of use, so that more fish may have been reaching the spawning grounds, suggests the possibility that the fishery may be revived by proper regulation of netting. Such a regulation, in order that fish may have an opportunity to spawn, is quite as important in a well rounded system of fish culture as is propagation in hatcheries. It is accordingly further discussed under the heads of Tidal Waters and Fish Culture on pages 66 and 81.

Fisheries Boat for Lake Erie. In connection with the fisheries of the Great Lakes it is appropriate to point out here that at the present time the Commission has no boat large enough to adequately supervise the operations of the commercial fishermen of Lake Erie. A license is required of all of them to operate in New York waters and they are required to conform to certain regulations. For the enforcement of the laws and regulations, however, a boat that is seaworthy on that large body of water is a vital necessity. The Commission accordingly requests a sufficient appropriation to provide a boat for this supervision.

LICENSED NETS AND SET-LINES FOR THE YEAR 1918

Kind of Net	Number of Licenses	Number of Nets, Lines or Boats
Hudson River:		
Set lines	4,250	4,250
Fykes	137	725
Scaps	259	269
Gills	126	131
Seines	62	62
Stakes	31	34
Tide lines	20	24
Chaumont Bay:		
Gills and seines	7	9
Traps	17	89
Fykes	17	172
Scaps	2	2
Different Waters:		
Minnow nets	263	263
Eel weirs and eel pots	47	351
Scaps	281	288
Traps	240	525
Fykes	145	670
Seines	84	85
Gill	6	14
Sturgeon lines	82	160
Lake Ontario:		
Motor boats for trawling.....	83	83
Traps	6	15
Lake Erie:		
Motor boats for trawling.....	61	61
Traps	12	45
Niagara River:		
Machine traps	3	6
Total	6,241	8,333

BUREAU OF MARINE FISHERIES

The receipts of the Bureau of Marine Fisheries from rentals, taxes, penalties, license fees, sanitary certificates and miscellaneous sources for the fiscal year ending June 30, 1918, were \$23,747.70.

During this period leases were executed for 435 acres, 153 sanitary certificates for shellfish grounds, covering 2,939 acres, and 68 menhaden fishing, lobster and food fish licenses were issued.

These licenses represent a total tonnage of 1,692 tons. At the close of the year 234 leases, covering 12,276.8 acres, and 622 franchises, covering 13,570.6 acres, were in force, making a total of 25,847.4 acres under lease and franchise.

Applications in a new area opened up by the Commission in Staten Island Sound for the cultivation of shell-fish, covering 955 acres, have been received and filed for leasing.

Seventeen surveys have been made during this period, covering 654.6 acres. The State boat Rednav has been in commission during the entire season, performing the work of making examinations of the shell-fish conditions in Long Island Sound and other New York waters. The power dory, purchased for the Bureau, for use in connection with the work of the Rednav, will fill a long felt want for a boat of this size and will be a very valuable asset in the survey during the coming year. It has already proved its value in making several examinations and surveys in Long Island Sound, in shallow water, where a larger boat could not be used.

JURISDICTION OVER TIDAL WATERS

The legislature, at the last session, extended the jurisdiction of the Commission over the Hudson river to its mouth, thus making it possible to regulate netting and other fishing in such a way as to insure the continuance and increased productiveness of those waters. It is desired here to point out again the importance of extending the jurisdiction of the Commission over all waters of the marine district. At present no regulation of any sort is maintained over most of these waters, with the result that immature fish are taken in large numbers and fish are taken on spawning grounds when it would be desirable to protect them. If the Commission should have jurisdiction over these waters, it would be possible by regulating the size of the mesh of nets, and by other simple regulations, to introduce a protection that is very greatly needed if the coastal waters of New York State are to furnish fish food in the greatest abundance. It is certainly logical that, if the state operates a hatchery for the production of marine fishes, as it now does at Cold Spring Harbor, if field stations for the taking of eggs from marine species are established as recom-

mended in this report, and if increased emphasis is to be placed upon increasing the fishing in the marine district, the corresponding step of adequate protection should now be taken. As the Commission pointed out a year ago, until such regulation is put into effect, the marine fisheries will continue to be the weakest link in the state's entire scheme of conservation.

BUREAU OF FISH CULTURE

The work of the Bureau of Fish Culture during the year 1918 has followed certain well defined lines of effort intended to effect material increases in the efficiency of fish cultural operations. The guiding principle throughout the year has been to look every situation squarely in the face, analyze it into its fundamental factors, continue and expand every good feature, correct every faulty detail that is possible of immediate correction, and lay the ground work for improvements that must be deferred until another time. The science of fish culture is a progressive science, with new methods constantly coming to the front and displacing those that are outworn. New York has always led in this work, and must continue to do so, rather than rest upon past laurels. The work of the year has been directed from this point of view.

The principle topics for discussion may be classified under the following heads:

- I. Improving the physical condition of the hatcheries and equipment.
- II. Introducing more scientific methods and exact technique into fish production.
- III. Discontinuing the propagation of certain fishes that cannot be extensively caught and devoting attention to more profitable species.
- IV. Continuing the work of stream study, that the product of the hatcheries may be planted to the best advantage.
- V. Increasing the efficiency of employees.

It will be clear upon reading the following pages that an increased production of the food fishes, as distinguished from such

game species as the trouts and the basses, has been one of the principal objects of the year's work. It will, of course, also be apparent that steps of the sort taken and recommended here cannot be expected to yield immediate results. It takes several years to grow fish to edible size, even after reorganization and reconstruction to increase output have been completed. The Commission is confident, however, that the work initiated during the last few years will bring positive results if it is consistently carried out from year to year.

Improving the Physical Condition of Hatcheries and Equipment

Any comprehensive discussion of general improvements to the New York State Fish Hatcheries must begin with a statement that many of the hatcheries were located, planned and built when the science of fish culture was in its beginning. It is accordingly logical to expect that considerations that were important at that time have now lost some of their weight, and that methods then the best have now given place, in thoroughly modern establishments, to other practices. A tour among all of the New York State hatcheries, including both the old and the new constructions, will give visual evidence of the truth of these statements. The fine, new hatchery at Dunkirk, which has just been completed as this report is written, is the last word in a hatchery designed for the propagation of the food fishes of the Great Lakes. In contrast to this hatchery, conditions exist at some other points which it is important to correct. A complete discussion of all of the details of the work will not be attempted in this brief report, but will be covered by the Commission at another time. It is desired, however, to indicate in the following paragraphs some of the more important things that have been undertaken during the year and to point out some of the new work that must ultimately be done.

Adirondack Hatchery. Extensive repairs to the hatchery building were made during the year. The sills and lower portion of the wall studding had become badly decayed and were replaced with a wall of concrete extending up as far as the decayed portion. The wooden floor also was decayed and was replaced by a solid,

concrete floor. When this hatchery was built, concrete construction had not been developed, and the building was of a very excellent type for that time. In view of the fact, however, that hatcheries are very much exposed to moisture, because of the water constantly flowing through them, the modern method of using concrete is now resorted to practically universally. By building a new concrete floor, and replacing the lower portions of the side walls with concrete, a large part of the benefits of modern construction have been obtained without the necessity of rebuilding.

A new source of water supply has been developed at this hatchery, which provides additional spring water. This will be very important as an auxiliary supply to the water from the lake for the purpose of regulating temperature.

Twelve new, concrete rearing races have been constructed, which very materially increase the capacity for raising trout to fingerling size. This is in line with the Commission's policy of filling as many applications as possible with fingerlings, rather than fry — a policy that is necessitating increased facilities at many points.

This hatchery, with some minor exceptions, is now in first class physical condition and well adapted to the purpose for which it is operated.

Bath Hatchery. At the Bath Hatchery the sills to the hatchery building and some of the studding are badly decayed, while half of the flooring has dropped in some places several inches. It is thus absolutely necessary that a new floor be placed under at least half the building and that a concrete wall be constructed to the height of the decayed studding. Some of the rearing races have fallen into decay and should be reconstructed. There are also needed minor repairs, among which may be mentioned the installation of a heating system. At this hatchery, as at some of the others, there is no provision for a lighting system which will permit of efficient and economical operations during the short, dark days of winter.

Difficulty in rearing brook trout has always been experienced at this hatchery and it has, in fact, been found necessary to ship

the trout at a comparatively early stage of development if a disastrous mortality is to be avoided. Much study has been given this problem and, in an attempt to solve it, a flume 630 feet in length has been built from the source of the springs to the hatchery building, in order that the water may be conveyed in the open air through a shallow trough, and thus become better aerated. It has not yet been determined how effective this flume will be. Brown trout and lake trout do not suffer the same mortality at this hatchery and their rearing is thoroughly successful.

The rearing races, which were at some distance from the building, have been moved to a position adjacent to the building, not only in order to receive the water from the newly constructed flume, but also to concentrate the work of the employees in one place.

If some of the difficulties which have always characterized the operation of the Bath Hatchery cannot be overcome, it is possible that it may be found unwise to continue its operation. In that event, a new location, having a more abundant and satisfactory water supply, should be sought in the same general locality and a hatchery constructed there that will be both efficient and economical. While this question is to be approached with extreme caution, it nevertheless should be recognized in all candor that the state cannot continue to operate under wasteful conditions.

Caledonia Hatchery. The workshop at this station has been moved to a more convenient site and placed upon a concrete foundation, and a concrete floor has been constructed to replace the old wooden floor which had rotted out. In addition the coal house was raised three feet and placed upon a concrete foundation.

The water supply at the Caledonia Hatchery has heretofore been drawn from the stream in one place for both the hatchery and outdoor ponds. This has caused such a current that large amounts of algae and sediment were drawn into the hatching troughs, thus necessitating constant work to clean the screens and prevent the troughs from overflowing. A conduit 340 ft. long was this year constructed for the purpose of supplying water to the hatchery independently of the supply to the ponds, with most beneficial results.

Chautauqua Hatchery. During the year property immediately adjacent to the hatchery has been purchased and the building thoroughly repaired as a foreman's residence. It is now necessary to build ponds back of the hatchery and foreman's residence and a breakwater and boat house in front of the hatchery. The property is all in excellent condition, well adapted to its purpose, and needs only the few additions mentioned to make it one of the best stations of its size and character in the state.

The legislature last year appropriated \$2,000 for the purchase of property on the opposite side from that mentioned above. The owner of this land, however, raised the price to \$2,500 and it was not thought advisable to take it at that figure.

Cold Spring Harbor Hatchery. The general physical condition of this station is good; the water supply is excellent and the hatchery forms an important link in the state's chain. Ordinary repairs during the year have been taken care of by the regular employees.

Delaware Hatchery. This station is in good condition except that the pipe line leading from the source of the water supply to the hatchery is now 16 years old and has become clogged and rusted. A new line of larger size must accordingly be relaid. It is also necessary to construct a number of new troughs to replace some that are badly decayed.

The water supply of this hatchery is not satisfactory, being taken from a mountain stream about one and one-half miles from its source. At certain seasons of the year the stream is torrential and the water bears large quantities of sediment, while in times of drought the quantity is inadequate to supply all of the ponds and rearing troughs. Methods of correcting this situation are being carefully investigated, in the hope that the water supply can be made suitable for the purpose.

Dunkirk Hatchery. This fine, new hatchery was just being sufficiently completed so that it could receive its first consignment of eggs as this report was written. The design of the building is thoroughly up-to-date in every detail and the hatchery will fill a most important place in the state's system of fish propagation. It has an installation of one thousand hatchery jars, which have a

capacity for 288,000,000 lake herring eggs. What this is bound to mean in greater quantities of food fish is evident when it is considered that the annual catch of these fish along the New York shore of Lake Erie is now in the neighborhood of 20,000 tons. With the greatly increased facilities of the Dunkirk hatchery for restocking with these fish, the catch should run far larger in a very few years.

The grounds about the station will require considerable grading and building of driveways. It is also important that the construction of a residence for the foreman be undertaken as soon as funds can be provided.

Fulton Chain Hatchery. Until recently the Fulton Chain Hatchery building stood on posts, and these, as well as the sills of the building, had become badly decayed. The posts have been replaced by a concrete wall and, inasmuch as it is doubtful if the floor will sustain the tanks and troughs more than a year longer, it is very necessary that a concrete floor be put in during the coming year. The troughs also are very old and in bad condition and should be replaced with new ones when the floor is removed.

Last January the workshop was seriously damaged by fire, the upper story and roof being consumed. During the year the building has been repaired and painted by the regular station employees.

This station is badly hampered as to the quality of its water supply, which comes from Fourth Lake and becomes so warm in the early spring that it is impossible to successfully retain and rear trout fingerlings. An appropriation is now available for securing an adequate piece of land, on which there are springs well adapted for the purpose, and the purchase of the property is awaiting a report from the Attorney General's office on the question of titles.

Linlithgo Hatchery. The physical condition of this station is good, with the all-important exception of water supply. The water comes from a stream that is very subject to floods and at such times carries enormous quantities of foreign material. At other times it becomes low and warm. After a very careful study of these problems, the Commission desires to state that to improve the condition of the water supply at Linlithgo, if indeed, that is

**The new Dunkirk Hatchery is exclusively for the propagation of the
food fishes of the Great Lakes.**

In the jars here visible are 20,000,000.



The new fish rack for taking pike perch at Constantia.
The proposed location for a new hatchery, to replace the old Onelda hatchery, is shown along the farther bank.

even possible, would cost more than to construct and equip a station where a perfect water supply is available. The propagation of shad to the utmost limits of our ability is so vitally important, in view of the alarming decrease of the numbers of these fish from year to year, and the demand is so insistent for other fishes that are handled there with great difficulty, that the Commission recommends that the Legislature make an initial appropriation for a new hatchery for shad and other fishes. If this is done the Commission can then make a careful canvass of all possible sites along the river for a new hatchery and also go more fully into the question of the disposition of the present one. This is one of the places where the waste is so palpable, due entirely to natural causes, that it should not longer be continued.

Oneida Hatchery. An innovation in the method of taking pike perch for spawning purposes was introduced at Oneida during the spring run of fish. A fish rack, similar to the salmon racks used on the Pacific Coast, was placed in Scriba Creek, and entirely did away with the necessity of netting the fish out of the stream with hand nets at night, which has been the method heretofore practiced. The fish run up from the lake on a rising temperature, meet the obstruction of the rack across the bed of the stream, nose along it until they find a narrow V-shaped opening, and go up through this to a trap above, where they are readily dipped out. This fish rack makes it possible to take more fish with less men, to get them to the stripping house in better condition, yielding a better quality of eggs, and also to get practically every fish that runs up the creek.

The Commission feels that important changes are necessary at the Oneida Hatchery, for the purpose of effecting greater economy and efficiency in operation and increased production of fish at this most important station. At the entrance to the hatchery grounds along the side of Scriba Creek, and close to Oneida Lake, are a stripping house and minor buildings for the storage of equipment. Inasmuch as many of the fish, from which spawn is taken, run up Scriba Creek close by the stripping house, while the fish that are taken from the lake itself are easily brought to the stripping house by boat, the arrangement is ideal up to this point. The

hatchery building itself, however, is located a quarter of a mile away from the stripping house, far from the highway and in a most inaccessible location. Moreover, the building is old and expensive to operate. It is a frame structure, sheathed inside and out with no paper between the sheathing, and it is necessary throughout the winter to employ an extra man to keep the fire going throughout the night. If the fires are banked, the water pipes will freeze in cold weather. The heating plant consists of an old upright boiler, evidently originally designed for producing power. Its operation is very expensive, since it requires between 60 and 70 tons of coal to heat the building for a single season.

In addition to the handicap of construction and location, the water supply of the Oneida Hatchery, at the point from which it is now taken, is not sufficient in volume to warrant any extension in fish cultural work. Such an extension is very desirable, particularly in the direction of the hatching and rearing of brook trout and lake trout, a considerable demand for which exists each year in the territory immediately accessible from the Oneida hatchery.

The Commission believes that in the interest of economy of operation and better and larger output, a new and modern hatchery building should be constructed beside Scriba Creek, close to the stripping house on land now owned by the State. At this point there is an old dam across the creek, which could be reconstructed or repaired so as to produce a very excellent water supply for the hatching and rearing of the particular kinds of fish to be handled here. There is also opportunity at this point to utilize an old mill race for the construction of excellent hatching ponds, whereas, at the old location, the pond system is very inadequate.

The station is also in need of a boat house capable of storing the Commission's launch "Quatre Vents," used in connection with the hatching work, and also the launch used by the game protectors. The building should have a loft in which to store and repair nets and store the small hatchery boats.

When the changes here briefly outlined are carried out, the Oneida hatchery, which is located beside the most prolific fish producing body of water of its size in the State, should be one

of the finest hatcheries in the country for the propagation of pikeperch, brook trout and lake trout, and it should have, in addition, excellent possibilities for extending the work to other species.

St. Lawrence Hatchery. The construction of this hatchery was begun a few years ago for the purpose of providing a station for the hatching of bass. During the last year an addition was built to the sea wall along the river to prevent washing out the embankment and a substantial stairway was built from the hatchery grounds to the pumping station beside the river. In addition, a few minor repairs were made.

The fact that the St. Lawrence river provides an excellent source of supply for both pikeperch and mascalonge eggs led to an experiment in their hatching during the past season. A small portable battery of 60 hatching jars was located in the pumping station and a water supply was obtained by tapping the mains that fed the bass ponds. There were disadvantages in this improvised arrangement, but, nevertheless, this temporary experimental work has convinced the Commission of the desirability of extending the Ogdensburg hatchery so that it can handle both pikeperch and mascalonge under proper conditions. For this purpose a small building should be erected with a battery capacity of at least 200 jars. As this hatchery would not be in operation during the winter, it would not be necessary for the building to be of very expensive construction.

Warrensburg Hatchery. At the Warrensburg Station facilities for rearing trout fingerlings have been increased between thirty and forty per cent., by the construction of outdoor rearing races, and an increased water supply has been derived from springs heretofore undeveloped. A storage shed with a workshop and concrete floor has been completed. No further improvements are now contemplated in the immediate future, other than such as may be made by the regular station employees.

The Warrensburg Hatchery, which is entirely new, was designed exclusively for trout, and for this purpose it is one of the best hatcheries in the State, both as to the character of buildings and water supply.

Field Stations. The desirability of field stations for the collection of the eggs of many species of fishes, for the hatching

of certain of them that have short periods of incubation in the spring, and for the rearing of some of them to fingerling size, has become very clear during the last two years, as a result of the constant study that has been given to methods for the improvement of fish cultural work. Such stations are thoroughly established factors in the hatchery system of the United States Bureau of Fisheries and of some of the more progressive States. In view of the fact that New York State operates twelve hatcheries that draw their supply of eggs from every part of the State's large territory and distribute fish equally widely, it seems important to establish field stations as rapidly as possible, for the purpose of both efficiency and economy.

For the collection of the eggs of several species the Commission relies almost exclusively upon certain localities where these fish are found in abundance at the spawning time. The work of spawn gathering requires considerable equipment, some of which it is difficult to transport. Field stations at these points, in which equipment can be stored and where the work of spawn taking can be carried on with the proper facilities, will make the work much more certain and effective. At most of these places it is also desirable to install a limited amount of hatchery equipment for the purpose of hatching those eggs that incubate in a short time in the spring and the fish from which have to be returned immediately to the waters from which they were taken. Such a simple installation of hatchery jars, with facilities for providing water, would be comparatively inexpensive, would require attention only during a short time, and would add very greatly to the output.

In the report of a year ago the establishment of field stations at various points on Long Island for the collection of flatfish and tom cod eggs and for the hatching of more of them than can be handled in the Cold Spring Harbor hatchery was advocated. The Commission feels that, if funds for this work are provided, they will yield abundant results. The two sites recommended are at Shinnecock Bay and Amagansett.

A field station should be established at Sodus Bay on Lake Ontario, for the collection of green-back herring eggs and for the hatching of that proportion of them that are needed for re-stocking at that point.

There is opportunity for a very material increase in the output of fingerling trout of all three species, brook, brown and rainbow, by the establishment of field stations for rearing purposes at various points where a proper water supply exists in a convenient location for transportation. Such field stations would consist of a battery of outdoor troughs with simple shed protection, or of earth or concrete rearing races. They would be operated only from spring until fall and would be in many ways comparable to the better types of nurseries operated by Fish and Game Associations. Such field stations could be stocked with fry early in the season and would thus relieve much of the congestion at the hatcheries, since far more fry are hatched than it is in any way possible to rear at the hatcheries themselves. There are a number of points in the State which are very difficult to reach with shipments of fingerlings direct from the hatcheries, but they could be very readily served from field stations in those localities. Inasmuch as the outlay for each station would not be large, the Commission recommends that funds be provided for their construction.

The modern practise among fish culturists is to thoroughly test out a proposed hatchery site by operating a field station at that point for enough seasons to clearly demonstrate the value of the water supply and other facilities. If this method had been followed when all of the New York hatcheries were located many years ago, a number of mistakes would have been avoided. It should be kept in mind that field stations established now may possibly prove out new locations for certain of these old hatcheries that will make them much more productive and economical.

Transportation Facilities. The trucks recently provided by legislative appropriation have added tremendously to the efficiency with which fish can be shipped to applicants. In this work efficiency is synonymous with the quality of the fish at the end of the journey, since the speed with which they are taken from the hatchery to the applicants in far parts of the State determines whether they shall live or die.

At the Cold Spring Harbor station it was formerly necessary for a messenger to travel one hundred miles or more with eggs from the collecting point, whereas he now reduces the distance

nearly one-half by the use of a truck. In the distribution of fry, work can be done in one day that formerly required several trips and several days.

At the Chautauqua Hatchery the truck has been used in making quick trips to distant points, like Sodus Bay and Dunkirk, getting eggs and fry back and forth in a fraction of the time required by train.

At the Bath Hatchery the truck has reduced the time consumed in the distribution of fish in a great many instances from twenty-four hours to a matter of half a day.

The same stories can be told for hatchery after hatchery where the trucks are in operation. Some of the hatcheries are located on railroads with very poor connections at junction points, and the trucks make it possible to take a load of fish at the last moment directly across country to a main line railroad and thus save delays of sometimes as much as twelve hours at the junctions.

The Commission is contemplating the use of a truck to distribute fish to some places in the interior of the Adirondacks that now receive but little attention. The long hauls discourage the people in those sections from applying for fish, but, nevertheless, many of the waters are fished heavily and should be stocked equally so. With a suitable truck large consignments of fish could be started from the hatcheries located adjacent to the Adirondacks and fish could thus be delivered to places that are in great need of them.

The Commission's fish car "Adirondack", which is in constant use during the entire distribution season, has been overhauled and strengthened by the addition of heavy steel beams above the trucks, so that it is now possible to use it in connection with the steel cars of fast passenger trains. Unfortunately, however, there were not sufficient funds to install an aerating system to supply air to the fish cans. The car frequently stands for hours and sometimes for an entire night at junction points and during all this time it is necessary to keep 150 cans of fish aerated by the use of a long-handled dipper and man power. The installation of a modern aerating system, which would supply compressed air to the water in the cans, would not only be a tremendous help to the men themselves, but would also very much improve the quality of the fish. It is also important that electric lights be

installed to facilitate the work of the messengers in the examination of the contents of the cans while enroute.

It should be understood in this connection, however, that any repairs and additions to the "Adirondack" are simply in the nature of a temporary expedient to prolong the life of this old car by a few years. It has already been in service for 27 years, is of a very old type and must shortly be displaced by a modern car.

Introducing More Scientific Methods and Exact Technique Into Fish Production

Fish cultural methods at the hatcheries have been given the same careful attention during the past year that the physical condition of the plant itself has received. It is unnecessary here to go into full details of this work, which is more suited for a scientific treatise on fish culture. The Commission desires to point out, however, a few of the more important things that have been done.

Fish Food. During the past year the Commission was faced with the fact that it was planning to rear more and larger fingerlings, necessitating more than the usual amount of fish food, at a time when the price of foods commonly used for feeding fish had gone to an abnormally high level. To keep within the appropriation provided, without curtailing the output of fingerlings, it became necessary to develop new sources of food supply.

At the Chautauqua Hatchery young trout were fed almost entirely on carp from the lake from the time they were two inches long until they reached a length of four inches, and for this purpose 3,665 pounds were consumed. The Caledonia and Bath Hatcheries were supplied with carp from this source amounting to 1,155 pounds. The net used for catching the carp caught 268 billfish, which are very destructive, and it caught also 534 suckers. Billfish, suckers and carp amounting to 4,927 pounds were shipped to the game farms for conversion into food for feeding pheasants.

At the Fulton Chain and Adirondack Hatcheries suckers were used to some extent as fish food. At the Adirondack Hatchery yellow perch were extensively used. The perch, which were caught in Saranac Lake, are very grubby and for this reason are

not valued by anglers. As there is no known remedy for the grubby condition of these fish, it seems advisable to utilize them continuously for fish food.

At the other hatcheries experiments were made with various foods in an effort to reduce the costs of rearing fish. The new foods were found to be entirely successful and will effect material economy in succeeding years.

Greater Production of Fingerling Trout. The policy of producing more and larger fingerlings has been continued. The number of every species except brook trout was greater, while the average size of all species ran in excess of previous years. Work with the brook trout was handicapped to some extent by the fact that shipments of eggs during the severe weather of last year were frequently delayed in transit and arrived in a frozen condition. Cases that should have been on the road for not more than twenty-four hours were sometimes that many days in being delivered.

Fingerling land locked salmon were distributed to the number of 140,732, as against approximately 20,000 for the year before. It is proposed to stock certain of the Adirondack lakes with them, where the native trout have been displaced by bass or other fish.

Rearing Shad to Fingerlings to be Abandoned. It has been the practice for many years to rear shad fry in ponds at the Linlithgo Hatchery and liberate them in September by opening the outlet to the ponds and letting the fish go out into the Hudson river. No record of the number of fish surviving in the ponds for liberation at the end of the season was ever attempted, reports being based entirely upon the number of fry introduced in the spring. The number of fingerlings reported in this way in statistical tables of the Bureau of Fish Culture as planted each year since 1911 is as follows:

1911	.....	100,000
1912	.....	300,000
1913	.....	500,000
1914	.....	750,000
1915	.....	550,000
1916	.....	900,000

In 1917, 500,000 fry were introduced into these ponds in the spring in exact accordance with the methods of previous years. In the fall, however, arrangements were made to intercept the fish as they left the pond in such a manner that they could be counted in bunches of from 5 to 20 without handling and then allowed to continue their journey to the river. The result thus obtained shows that out of 500,000 fry introduced into these ponds a total of only 2,265 fingerlings, ranging in length from three to five inches, were actually produced for planting at the end of the rearing season.

In counting the fingerlings in 1917 it was found that the pond contained quite a number of sunfish, suckers and eels, and these had undoubtedly fed to some extent on the shad. Effective measures were accordingly resorted to at the intake of the water supply to prevent the entrance of fish of this sort and another count was taken in 1918. Out of 444,000 fry introduced in the spring of this year, only 2,054 survived to the liberation time.

The Commission has become convinced as a result of these actual countings that shad fry can not be raised to fingerling size in the comparatively small ponds at Linlithgo, and that far better results will be arrived at by planting the fry on natural spawning grounds in the river. This will accordingly be done hereafter.

Regulating Shad Fishing in the Hudson. The Legislature at its last session extended the jurisdiction of the Commission over the Hudson river to its mouth. This made it possible for the Commission to issue an order requiring the lifting of all shad nets between Friday night and Monday morning, in order that the fish might have an opportunity to reach their spawning grounds. Shad will of course never come back to the river unless a sufficient number of fish have opportunity to spawn each year. With the river filled with nets from its mouth to the spawning grounds, there is small wonder that the quantity of fish has been decreasing each year. The lifting of nets during a part of the week should help to correct this.

For the last two or three years there have not been so many nets in the river as usual, due to the fact that some of the gear of the fishermen had worn out and there were not enough fish

running to make it profitable to repair it. This may possibly account for the fact that last spring there was a very unusual run of shad. If that is the reason, lifting of nets should operate in the same way, and the results should become manifest in a few years. The Commission will continue this order, but may possibly give a limited number of permits to fishermen for the purpose of obtaining spawn from them. An endeavor will also be made to enlist the cooperation of New Jersey in this regulation.

Last summer it was discovered that shad fingerlings in considerable numbers are washed up on the shore of the river by waves from passing boats, where they become stranded and die. This is one of the ways in which civilization affects wild life, without any remedy being apparent.

Statistics of Fish Production. Fish production runs into hundreds of millions. It is, therefore, perfectly apparent that special methods have to be used for ascertaining the number of eggs with which the hatcheries are stocked at the beginning of the season and the number of fish distributed from time to time. There are well recognized, accurate methods of ascertaining the number of eggs in the hatcheries as well as the number of young fish distributed, but on account of the large number of eggs and fish handled, it is obvious that unless great care is exercised at every step of the accounting, the statistical result may be very far from the actual facts. The opportunities for errors running into millions may be well illustrated by the flatfish. The eggs of this fish are only one-thirtieth of an inch in diameter and run 1,500,000 to the quart. In order that every possibility of error in the statistics of fish cultural operations might be avoided, the Commission recently undertook the entire reorganization of the methods of determining the output of the hatcheries.

The eggs of many species, such as the flatfish, tomcod, pike-perch, lake herring, and others, which are produced in lots of many millions, are hatched in glass jars of standard size and design. Immediately after hatching, the product is planted as minute fry, which it is impossible to count or accurately measure. With all such species, the standard number of eggs to the quart has been verified or readjusted during the past year in each field of operations. Inasmuch as the eggs of the same species, taken

in different localities, may vary somewhat in size and number to the quart, it is sometimes necessary to have different standards for the same species. For each one of these standards, a graduated scale is provided that can be applied to the outside of the standard size jars and thus indicate the total number of eggs in the jar simply by reading the height to which the eggs come when they are at rest in the bottom of the jar. The result, however, can not be taken as the output of the hatchery in fry, because during the period of incubation bad eggs are continually rising to the surface of the jars and running off, or are removed by the hatchery employees, until the eggs hatch. There is thus some loss. Moreover, the eggs swell slightly as they approach the hatching point. Accordingly, standards of measurement used for new eggs can not be used for determining the number of eggs in the jars just prior to hatching. A new standard is established just before the eggs hatch, and all of the jars are remeasured by this standard. The Commission then has an accurate record of the number of eggs put into the hatchery, and the number that are hatched and planted since the mortality after the second measurements are taken is usually negligible.

In ascertaining the number of eggs of species hatched on trays, such as the trouts, the number in a given number of fluid ounces is accurately counted, to establish a standard, and the eggs are then all measured in a graduated glass.

When preparing young trout or bass, of fry or fingerling size, for shipment, it has been found that weighing produces the most satisfactory results as to accuracy, minimum of handling and economy of labor. A definite number of fish of the same age are placed in a pan containing a known quantity of water and are weighed on delicate scales. The weight of the pan and the water are then subtracted from the total weight and the result is the weight of a known number of fish of the same age. The number of fish in the shipment is then easily ascertained by simply weighing fish of the same age in a pan with the same quantity of water, and making the necessary calculations.

The larger fingerlings are weighed like the fry or are actually counted by dipping them in a small scap net, several at a time, from the troughs directly into the shipping cans.

The entire reorganization of the method of counting fish is but one phase of the Commission's endeavor to introduce modern and efficient methods into fish cultural work. It is surely clear that no work can be handled efficiently unless those responsible for it have an accurate knowledge of every detail.

The Commission is convinced that the people of the State of New York are not so much interested in statistical fish as they are in fish on the hook, and it is directing the work of the Bureau of Fish Culture from this point of view.

New Methods in Lobster Culture. In the propagation of lobsters heretofore, it has been customary to ask the fishermen to bring in berried lobsters to the hatchery at Montauk, where the nominal sum of ten cents each was paid them for the privilege of scraping the eggs from the lobsters. The lobsters were then returned to the fishermen, who sent them to the market. The eggs were placed in the hatchery and the lobster fry distributed in adjacent waters immediately upon hatching.

For the first twenty-five to thirty-five days after the young are hatched under normal conditions in the ocean or are placed there from the hatchery, the young lobsters float about on the surface of the ocean, the helpless prey of numerous enemies. Accordingly, whatever improvement the hatchery method may have over nature is in the protection of the eggs from enemies during the period of incubation.

To make any further definite progress in lobster culture at the hatcheries, facilities must be provided for tending and feeding the fry during the twenty-five to thirty-five days that they naturally float upon the surface. When this period is passed, they have developed to the stage when they are ready to become bottom feeders, and they then instinctively seek the shelters provided by nature along the bottom of the ocean. Until this time is reached, however, they have very cannibalistic tendencies. The equipment for rearing them to the submersible stage would accordingly call for a very expensive plant with apparatus to keep them in constant motion, as otherwise they bunch together and devour one another very rapidly.

Owing to the fact that during the past year many of the lobster men were in the military service, so that there were not so many

lobster traps in operation as usual, and because of the general scarcity of labor, a new method was introduced into lobster culture. All egg-bearing lobsters were purchased from the fishermen at wholesale market prices. These lobsters were then marked with three eyelet holes through the tail as a protection against their being purchased again, after which they were liberated with the eggs on them in Fort Pond Bay, Long Island. This action was based on the theory that if the parent lobsters are not molested, the eggs that they carry and the fry developed from them will be distributed by the movement of the parent lobster and water currents and produce the same results as if hatched artificially and then planted. Moreover this gives the parent lobster a chance to live and produce another year.

The fishermen are generally in favor of the new method and doubtless more berried lobsters are furnished to the Commission than under the former plan, since there is less temptation to scrape the lobsters and throw away the eggs to avoid detection under the law which prohibits the taking of berried lobsters.

Transforming Abandoned Canals into Hatchery Ponds. Probably no fish cultural work of the Commission in recent years promises to equal the conversion of the old Erie and Champlain canals into ponds for the propagation of some of the warm water food and game fishes. The beginning of this project was made possible by an act of the last Legislature appropriating \$10,000 for the purpose. This money has been expended in the construction of five ponds in the old Erie canal between Fort Hunter and Amsterdam, and an equal number of ponds in the old Champlain canal between Schuylerville and Coveville.

At Fort Hunter water is derived from the Schoharie creek, through the abandoned Schoharie creek feeder of the canal. The feeder itself has been made into two ponds by a concrete and earth culvert under the highway bridge at Fort Hunter. With the addition of more filling, this partition may be made to replace the wooden bridge maintained at State expense. Another partition eliminates a farm crossing heretofore maintained by the State. Four bridges used at farm crossings on the Schuylerville section were replaced with concrete conduits and wooden driveways. As all these bridges were heretofore maintained at State

expense, the construction for fish cultural operations has affected a considerable saving in maintenance.

The ponds at Fort Hunter are between three and four miles in length and, with the exception of the ponds in the feeder, have an average width at the water line of about seventy feet. The construction at Schuylerville comprises about four miles of canals.

Altogether the pond cultural area made available in both canals is more than fifteen times as great as all of the area at the State hatcheries and in excess of the pond cultural area of all the hatcheries of the United States Bureau of Fisheries.

The use of sections of abandoned canals in this way makes possible the retention of every feature that has made pond cultural work at the hatcheries so successful. The comparatively small ponds at the hatcheries are fed by a water supply suited to the fish in the same way that the canals are provided with water from adjacent streams. Large predatory fishes are kept out of the canal ponds by damming and screening in the same way that these enemies are excluded from the hatchery ponds. The canal ponds also make artificial feeding possible to any extent that may be found desirable. The small hatchery ponds and the large canal ponds are in part identical from the fish cultural point of view, except in two respects, and these two details are important differences that are expected to very greatly increase the quality and amount of the output.

In the first place, the very large extent of the canal ponds makes it possible for certain species of fish, that can not be propagated in close confinement, to be spread out over a wide area, thus reducing their cannibalistic tendencies.

In the second place, the large area of the canal ponds provides a natural food supply in the form of minute aquatic life upon which the small fry and fingerlings feed. This reduces the necessity for much artificial feeding and produces a more hardy crop of fish.

Efforts were made to complete the construction of the canal ponds in time to receive the spring spawning fishes, but on account of the prevailing scarcity of labor this was found to be impossible, so there still remains a little more work to be done to provide a better water supply and drainage. Nevertheless, for the pur-



**Transforming abandoned canals into hatchery ponds offers unlimited
and inexpensive opportunity for fish culture.**

Removing fingerling fish for stocking purposes from one of the canal ponds.

pose of doing at least some experimental work without waiting for another year, the ponds were filled on the last day when there was any hope of procuring fry with which to stock them. Yellow perch and small mouth black bass fry were introduced into three sections of the Erie canal at Fort Hunter. One of the ponds at Schuylerville was stocked with adult bullheads from Chautauqua Lake. These bullheads grow to a very large size, are excellent food fish, and during the past winter commanded a price of about fifty cents a pound in the open market. Another section of the canal at Schuylerville was stocked with large mouth black bass obtained from the Tomhannock reservoir at Troy. This is the first time that bullheads and large mouth black bass have been propagated in this State.

When the crop was harvested at the end of this first experimental season, it was found that 38 adult large mouth black bass produced 3,400 fingerlings ranging in length from three inches to six and one-half inches. Bullhead fingerlings to the number of 22,000 were taken out and planted in suitable waters. There were also about 18,000 yellow perch and 532 fingerling small mouth black bass.

When it is considered that in order to do any experimental work at all this year, it was necessary to stock the ponds before all the construction work had been finished and before facilities were provided for the destruction of some of the predatory fishes, and that it was so late in the season that some of the brood stock were already in spawning condition, whereas they should have been given time to become accustomed to the pond and build their nests, it seems perfectly clear that the idea of using abandoned canals for fish cultural work has been thoroughly demonstrated. As a matter of fact the Commission believes that this new use of old ditches is one of the most important steps made in fish culture in this country in many years. With almost unlimited opportunity for expansion of the work at very small expense, there is no reason why all the warm waters of the State may not be made to produce all of the fish that can live in them and find food.

When it is considered further that to build a pond cultural station of the usual type costs from \$25,000 to \$50,000, whereas

the canal ponds have cost only \$10,000, for fifteen times the area of all the ponds at the State hatcheries, it is plain that this use of canals is in the interest of economy as well as enlarged production.

Three of the ponds in the Schuylerville section are supplied with water throughout the year, thus making it possible to maintain at all times a brood stock of adult fishes. One of these sections is stocked with about 90 blue-gilled bream, which is the game variety of the sunfish, and a very desirable food fish.

Next spring it is planned to stock to its capacity every section of the canal ponds, some with bullheads, others with large mouth black bass, small mouth black bass, blue-gilled bream and yellow perch. When the construction is completed and the various details worked out, such as proper supervision and possibly some feeding, the canals will take their place as one of the most important factors in the State's system of fish culture.

It may also be possible to use some of the ponds for the rearing to fingerling size of such fish as the pikeperch, for which heretofore no rearing facilities existed. Some of these fish are very cannibalistic when confined in small areas, while others require a large range in order to obtain the microscopic food on which they subsist. The canal ponds provide so much greater range that it may be possible to propagate these fish in a way that has never before been done with success.

Some of the fishes, which make nests and protect the eggs of the young during the early stages, can not be artificially propagated, so that the only method of producing them is to place them in ponds under favorable conditions, with facilities for taking out the fingerlings when properly developed.

Temperature Conditions Affect Spawning. Fish cultural work has been conducted under war conditions, such as increased cost of labor, materials, supplies, scarcity of labor, reduction of train service and attending delays in the transportation and distribution of fish and eggs. Added to this have been weather conditions of an almost unprecedentedly hard winter during 1917-1918. The spawning season in the spring of 1918 was also very unfavorable for the collection of eggs of many species.

Success in the collection of eggs of wild fish varies with weather conditions. Many of the brood fish are obtained from commercial fisheries and are subject to the same uncertainty that the commercial fishermen themselves find in the course of their work. If bad weather prevails during the spawning season, the catch of fish at times may become a total failure.

The time of spawning of the various species of fish is determined by the water temperature and therefore it is beyond human control. For instance, in the spring of 1918 the ice left Scriba creek at the Oneida Hatchery and the water temperature began to rise before the ice had left the lake. The males immediately proceeded up the creek in advance of the females, as is customary, and were captured in the new fish rack erected across the stream. This work was proceeding when the temperature rapidly fell and forced the fish back into the deeper water of the lake. When favorable temperature conditions again prevailed in the stream, the ice in the lake had disappeared and the waters of the lake had reached a favorable spawning temperature, which caused the fish to seek spawning grounds in the lake. Conditions of this sort affected the spawning of many other species of fish during the last season, not only in New York State but also quite generally throughout the country.

It is probable that such adverse conditions, which affect hatchery operations from year to year, may also, and undoubtedly do, produce similar fluctuations in the natural spawning of the fish, and are thus the cause of frequent complaints by fishermen of the scarcity of fish during a period of a few years. In other words, conditions during the breeding season for fishes may affect the subsequent crop of fishes for some time thereafter, in the same way that birds and terrestrial animals are affected by adverse climatic conditions.

Climatic conditions interfered with obtaining eggs of some species of fish that have heretofore been procured from the United States Bureau of Fisheries or other points outside the State. The Commission believes that greater certainty in the supply of eggs of some of these species can be had through development of sources of

supply under the control of the Commission, and it is working upon plans to accomplish this end.

Propagation of Certain Species to be Discontinued.

The Commission pointed out in its last annual report that certain species of fish, such as the Adirondack frostfish and the tullibee, which have heretofore been propagated in large numbers, can not be taken by angling in the waters to which they have been returned, and the propagation of these fishes under these conditions has been totally unprofitable. They will not take the hook and to fish for them by any other method in the lakes now inhabited by them, is both unwise and unlawful, because it would endanger other species. Their propagation has accordingly been discontinued.

When labor conditions become more favorable, it may be thought best to collect the eggs of the tullibee and plant the product in Lake Erie or Lake Ontario, in order to promote commercial fisheries in those lakes. The Commission is guided in this policy by the idea that expenditure of effort and funds should be made only where actual results may be obtained.

Stream Study

The work of studying the streams of the State, in order that proper working plans for their systematic stocking may be developed, has continued throughout the year. This work was instituted in 1915. It was stated at that time that "simple business economy demands that the product of the State's eleven hatcheries, representing an annual commercial value of over \$200,000, be distributed and cared for in such a way as to insure the maximum return for the money and labor expended. The hatcheries themselves are run on a high plane of scientific efficiency. It is admitted, however, by those familiar with the loose methods of control over planting in the past, that it is now time to extend the scientific methods of the fish culturist to the work of placing the fish in the waters, and the care of them after they are planted. Working plans are contemplated for each county or larger section of the State."

As a first step in this work, Oneida county was studied by a competent field man and an assistant in the summer of 1916. The report on the county, accompanied by a map, and giving all of the necessary data for planting in connection with every stream in the county, was published in 1917. The report was planned for popular distribution, as an aid to applicants when applying for and planting fish, while more complete data were filed in the office of the Commission. This gave the Commission, for the first time, accurate, first hand, scientific information of the stream conditions in a large section of the State.

In September, 1918, the Commission entered this report at the Annual Convention of the American Fisheries Society in a competition for the best biological investigation applied to problems of fish culture. The Committee on Awards reported that the entry did not conform to the rules, because it was presented by a commission and not by an individual member of the Society, and had already been published. Its report stated, however, that the committee felt that the scientific study of stream conditions, as a basis for proper planting of hatchery products, is a work so unique in fish culture and so worthy of the commendation of the Society that it had decided to award Special Honorable Mention to the New York State Conservation Commission for its "Working Plans for Increasing Fish Production in the Streams of Oneida County."

During the past summer a survey was made of Tompkins county by Prof. G. C. Embury of Cornell University, assisted by one of his students, and a full report on that county is in the course of preparation. Efforts were made to obtain men qualified to make surveys in other counties, but they were found to be practically unobtainable. The training required for this work is possessed by very few men and those who might otherwise have been obtained were engaged in war work. It is hoped that arrangements may be made during the next season to undertake surveys of the waters of other counties.

So far only the running streams have been covered, because of the long time and special equipment necessary for lakes. It is

desirable to undertake this work on the lakes as rapidly as possible, for the purpose of making them most productive of the species of fish best suited to them.

Increasing the Efficiency of Employees

Fish culture has become a definite, recognized calling, not only for the men directly responsible for the general direction of the work, but also for the station foremen and employees. The United States Bureau of Fisheries has long recognized the need for special training and experience in practically every phase of the work, established a definite standard for employees engaged in its different branches, and has endeavored in every way to make it attractive for the men to perfect themselves in it and progress from one grade to another. In contrast to this finding of the United States Bureau of Fisheries, New York State has no such arrangement for grading its employees. The New York force is divided into two classes, hatchery foremen and laborers. This is not only inefficient from the standpoint of the State itself, but is also very discouraging to the men. As a matter of fact, comparatively little work in connection with fish culture is performed by men who are properly designated as laborers. Much of it requires a much higher degree of skill than would be expected of a laborer. The Commission recommends that this fact be recognized in the appropriation and that provision be made for paying the men in accordance with the work that they do, with opportunity to progress from one grade to another as they become proficient. This will make it possible to retain the best men in the service.

Grading the men and paying them salaries more commensurate with the work that they do will overcome another of the serious handicaps under which the service now labors. The small rate of wages now paid makes it difficult—more often actually impossible—to move the men about from station to station as fish cultural work develops at different seasons of the year. For instance, men employed upon pike perch work at Constantia in the spring object to being moved to Dunkirk for a short time in



**Weighing fish of the same size is a quick and accurate method of
determining hatchery output.**

the fall during the run of lake herring, because they are not paid highly enough to permit them to leave home. It is accordingly often very difficult to find competent men to do the highly specialized work of spawn gathering. The Commission frequently has to choose between employing competent men upon ordinary laborers' work during the off season at a hatchery, or letting them leave the service, with the subsequent uncertainty of getting them back when needed.

A small, mobile force of specially trained fish culturists is vitally necessary if the work of New York's twelve fish hatcheries is to be conducted according to approved methods.

The present system under which fish are distributed requires that the employees defray their own traveling expenses when sent about the State to distribute fish. It frequently happens that men whose salary is not more than \$75.00 per month are required to be in the field sometimes for as much as two months. It seems to the Commission unfair to expect men drawing this salary to carry in their pockets considerably more than a month's salary to pay their traveling expenses and board bills; and equally unfair to expect the foremen, who draw salaries of \$100.00 per month, to finance two or three of their employees while they are in the field. The Commission recommends that provision be made for a small fund to care for this situation.

DISTRIBUTION OF FISH

The total output of fish fry and fingerlings for the year ending December 31, 1918, was 396,323,526, as detailed in the accompanying table.

Brook Trout fry	1,136,000
Brook Trout adv. fry.....	24,500
Brook Trout fing.	2,133,825
Brook Trout yearlings	750
Brook Trout adults	13
Lake Trout fry	2,335,300
Lake Trout adv. fry	64,000
Lake Trout fing.	2,138,592

Lake Trout yearlings.....	2,200
Brown Trout fry	55,000
Brown Trout adv. fry	4,000
Brown Trout fing.....	497,825
Brown Trout adults	2
Rainbow Trout adv. fry.....	14,000
Rainbow Trout fing.	200,125
Rainbow Trout adults	12
Steelhead Trout fing.	74,100
Black Spotted Trout yearlings	715
Landlocked Salmon fing.	140,732
Whitefish fry	24,360,524
Frostfish fry	126,525
Lake Herring fry	38,115,000
Maskalonge fry	3,950,000
Pikeperch fry	54,722,250
Yellow perch eggs	1,740,000
Yellow perch fry	2,675,000
Yellow perch fing.	120,050
Rock Bass fing.	611
Calico Bass fing.	1,000
Smallmouth Black Bass fry	94,500
Smallmouth Black Bass adv. fry	1,000
Smallmouth Black Bass fing.	26,544
Smallmouth Black Bass adults	67
Largemouth Black Bass	4,300
Bullhead fing.	22,210
Bullhead adults	200
Shad fing.	2,054
Smelt fry	119,392,000
Flatfish fry	33,000,000
Tomcod fry	102,500,000
Lobster fry	6,648,000
Total	396,323,526

DIVISION OF LANDS AND FORESTS

INTRODUCTION

The work of the Division of Lands and Forests during the calendar year 1918 has proceeded with unusual smoothness, due to a number of factors which have materially increased the efficiency of the system under which this division is operating. The more important of these factors are as follows:

First. The Division of Lands and Forests has been working under the revised Article 4 of the Conservation Law, the new codification of forestry laws, which, in actual practice, has been found to be extremely workable and very satisfactory, not only to the Commission, but to the public with which the Commission comes in contact.

Second. In the constant endeavor to introduce methods of business efficiency into the work of the Conservation Commission, it has been found possible in the Division of Lands and Forests to adopt certain definite policies with regard to the handling of certain facts and conditions. Some of these policies exist as formal rulings of the Commission, while others are more informal methods of handling the division's business. The natural result of the adoption of these definite policies has been that much of the business of this division, which is very voluminous, falls into well-known grooves and proceeds through the department with comparatively little effort and friction on the part of the staff and the public concerned. The Commission feels that this method of handling the work of the division will in the years to come result in far less of the uncertainty and confusion regarding the State lands and their administration than has existed in the past.

Third. Every effort has been made in the division to cooperate with the public, share its confidence, and, as far as possible, work out policies which give the public every legitimate benefit of the property which this division administers or over which it exercises any sort of jurisdiction. The division has been met by the public in a similar spirit and this has very greatly facilitated the work.

The Division of Lands and Forests has been greatly handicapped by lack of proper help, due to the enlistment of some of its foresters and engineers in the federal service. Their absence has added additional burdens to those who have remained on the staff, and it has not always been physically possible to do the required work, on account of lack of men of particular training who were necessary to carry it on. Those who have remained in the division, however, have exerted every effort to keep the work running smoothly and, in general, they have thoroughly succeeded in so doing.

THE FOREST PRESERVE

The administration of an area about one and a half times the size of the State of Delaware, intermixed with private land of even greater area, located in sixteen different counties, and bounded by more than nine thousand miles of lines, is not an easy problem. The protection of this land from trespass, the establishment of boundaries, regulating the use of the land as restricted by the constitution and statute, and settling involved questions as to title, all require a great deal of effort, in order to fully accomplish the purposes of the Department. The result of the year's work in the administration of this land will be stated under various headings in the following pages.

Trespass. A record in the reduction of trespasses for the year has been accomplished. As a matter of fact, trespasses now committed are either trivial, or unintentional, due to erroneous location of lines, or to actual dispute as to the title of the land. Trespasses such as were committed a decade ago are unknown. During the past year, the records show that there were twenty-nine cases reported, and, exclusive of one case where the title to the land is in question, the total value of the timber cut amounted to only \$152.19. This is far less than in any previous year. There is, however, one case where the title to the land is in dispute, where material to the value of \$4,777.06 was obtained. This case has been prepared and is now ready for submission to the Attorney-General to bring suitable action to determine title to the land and timber. If it is determined that the land is the property of the State, suitable litigation will be conducted to recover damages and penalties therefor.

Occupancy. The policy of the Department regarding occupancy is based upon the result of the work of the Constitutional Convention in 1915. The Commission went before the Conservation Committee of the Constitutional Convention, explained all of the facts in regard to the occupancy of State land, and recommended the leasing of camp sites in the Forest Preserve. The Committee, however, refused to recommend to the Convention an amendment to the Constitution to permit the leasing of any part of the Forest Preserve, and the Convention went on record as criticising the Commission and its predecessors for permitting occupants to remain on State land during the twenty years that Art. 7, Sec. 7, had been in the Constitution. It, therefore, became necessary to ask the occupants to vacate. The work of clearing up this situation has been proceeding as rapidly as possible since that time, and the number of occupancies in the Forest Preserve, large and small, has been reduced from 911 to 194. Of these, there have been submitted to the Attorney-General 118, together with the records in the cases, and authorization to bring appropriate action.

In the remaining cases, there are questions as to lines or other facts which must first be determined. When so determined, the facts ascertained will result in the occupant vacating, or the matter will be referred to the Attorney-General.

Use. The Commission, in the performance of its duty to enforce the provisions of the Constitution respecting the Forest Preserve, and acting under the advice of the Attorney-General, has taken the position that no one shall have the exclusive use of any portion of the preserve; that no one shall be allowed to claim any particular camp site from year to year; that the State property shall not be used for commercial purposes; that public property shall not be used for private profit; that the forest lands and waters shall be enjoyed by all the people as far as is possible and compatible with the public policy expressed in the Constitution.

The use of the State lands for hunting, camping, fishing and other recreational purposes has developed rapidly in the last few years, and it is the Commission's desire that such uses be enjoyed as fully as possible, under such regulations as are necessary for administrative purposes.

The policy in regard to the erection of shelters in the Forest Preserve is that all structures, except tents or portable canvas houses, shall, when erected on the preserve, become the property of the State, and be reasonably regulated in their use. This plan does not give any one any claim upon State lands, but will afford a reasonable enjoyment. The principle followed is that temporary use of the land is all that can be allowed under the Constitution.

This plan is the most liberal which can be formulated under the present Constitution. It is an endeavor to make temporary use of the great forest preserve widely possible. It contemplates public control and use, as against private. There has not been such an extended use of the Forest Preserve this year as in some previous years, due to war conditions. The rules of the Commission require a camping permit where a party remains in any particular place more than three nights. Under this rule, 274 permits have been granted, and our field force estimates that 2,760 people, under such permits, enjoyed the use of the Forest Preserve. There are, of course, many times this number who camped for a short period and without permits. The permit system has not been in effect three years, but from all the information which we can obtain, the people have appreciated the permits and feel that they have a right which they did not heretofore have. It has, furthermore, resulted in better forest fire protection and better sanitary conditions at frequently used sites, and has prevented misuse of State property. There is in preparation a publication similar to that adopted by the National Parks, giving full information in regard to routes by rail, water and road, accommodations, location of State land, and other information which campers desire to know, and this publication will tend to greater increase in the use of this vast park, which the citizens of the State own.

In order to make the Forest Preserve more easily accessible to the public, the Commission has, during the past year, made and caused to be placed more than 300 signs, of standard design marking the various trails to mountain stations and of general travel in the woods. This work will be further continued, together with that of cleaning the trails and making them more useful.

In pursuance of the policy to make the Forest Preserve as accessible and useful as possible for vacation purposes, certain structures may be erected under permits. The demands of the several sections differ, and the Commission has provided in the rules to meet these conditions. The regulations contemplate open camps, tents both with and without platforms, and also portable canvas houses. The open camps may be erected for two general purposes:

1. For transients.
2. For hunters, campers and fishermen.

No structures are to be erected or maintained except under permit, and these structures are to be of a standard type. There have existed a number of tar paper shacks and other kinds of cheap camps, which have been occupied for camping purposes. Tar paper and other flimsy structures are not now permitted. An open camp is a structure open on one side and designed primarily as a place to sleep and as a shelter against storms. Taking one end out of an existing closed camp does not make it an open camp within the meaning of the Commission's regulations. The well developed type of structure known in the Adirondacks under the specific names of "Open Camp" and "Adirondack Lean-To" is the one contemplated in these regulations.

Open camps for transients will be limited in use to the same person not exceeding three nights in succession or ten days in any one year. They are designed for use of parties who climb mountain trails or travel through the woods. There are now a large number of people canoeing and tramping through the Forest Preserve, camping in one spot only temporarily, and traveling burdened with a heavy pack. If such open camps are erected, the camp outfit can then be reduced, a comfortable place to spend the night will be afforded, and safe fire-places will be provided for the building of fires.

The open camps for hunters, fishermen or campers can be used for reasonable periods. "Reasonable" is construed to mean such time as is necessary and proper and does not exclude others who might be entitled to use the camp, provided the former occupant had used it for a "reasonable" period. The idea is to give no one an exclusive privilege, but to insure to all a fair share of the enjoyment.

Several permits for the erection of open camps have been granted. Where such camps have been built, they are greatly appreciated and enjoyed by the public generally. In the judgment of the Commission, this is going to be a solution of the camp proposition in the Forest Preserve.

Roads. There was submitted to the public at the last election a proposition to amend Article 7 of Section 7 of the Constitution, which would permit the construction of a State highway across State land that lies between Old Forge and Saranac Lake, running by way of Blue Mountain Lake. The returns indicate that this amendment was approved by a vote of 609,103 to 299,899. The road, when constructed, will open the heart of the Adirondacks to the gateway from the southwest. There has recently been completed by the Highway Department a State highway from Little Tupper Lake to the Franklin County highway at Big Tupper Lake. This makes it possible to go from the southeast to the heart of the Adirondacks in far less time and with shorter mileage than heretofore. If the road from the southwest is completed, then the roads from the southeast and southwest will join at Long Lake, making the State land much easier of access.

With regard to private roads for lumbering purposes, the Department has formulated a policy, as a result of the advice of the Attorney-General, to the effect that permits for the use of old roads may be granted where it is not necessary to cut timber. The obtaining of facts and properly considering them has necessitated a great deal of work. Sometimes close questions were presented, but the Commission has endeavored to act on all these cases consistently, and according to the facts presented and the legal advice upon which it must rely.

ACQUISITION OF ADDITIONAL LAND

Purpose. Recognition of the importance of the maintenance of a forest cover in the mountains of the Adirondacks and Catskills induced the Conservation Commission in 1916 to recommend to the Legislature a referendum to authorize a bond issue of \$7,500,000 for extending the Forest Preserve. The Legislature acted favorably, and at the November election in 1916 the proposition was adopted by the people by a majority of more than 150,000.

The extension of the Forest Preserve is necessary for numerous reasons. The watersheds of the many streams that have



A type of the heavily timbered, steep mountain slopes surveyed by the Conservation Commission as a first step toward purchase.



The fire that swept for miles up this mountain was stopped by the green timber of State-owned land on the right. Purchase of additional land will help to prevent such destruction.

their sources in the uplands must be protected. The forest acts as a regulator of stream flow and tends to prevent serious floods and prolonged periods of low water. Regulation of stream flow is necessary to prevent flood damage, to preserve the navigability of the larger streams, to conserve the available water power, and to safeguard the potable water supplies of the large centres of population.

Consolidation of present state holdings in the Adirondack and Catskill Parks, through the acquisition of parcels of privately owned lands wholly or partially surrounding State owned parcels, will result in greatly decreasing the expense of administration. Shorter and straighter boundary lines in proportion to area, to protect against trespass, and a general increase in compactness, with attendant increased efficiency of operation, will result.

Uncontrolled cutting of timber and wood creates a fire hazard which endangers not only the area cut over, but also adjacent areas. Through the judicious acquisition of areas threatened with denudation, lying near Forest Preserve lands, the Commission has been able to a considerable extent to protect both present and future holdings.

In years past the Commission has urged legislation which would give it authority to regulate lumbering operations on privately owned lands, with a view to stimulating tree growth and perpetuating the forests. The Legislature has not favored this, but has, through the appropriation of funds to acquire land, made it possible to accomplish the same objects in another way. That is, the Commission is able to influence the character of lumbering operations on privately owned lands through its power to acquire the lands, either by purchase or appropriation, if such action is deemed necessary.

Policy. The Commission's first step was to develop a rational policy of land acquisition, which would permit the fulfillment of the purposes outlined above. When this had been done it was referred to interested heads of State departments and to members of the forestry profession for criticism, so that, as finally adopted, it represents the careful thought and experience of experts. However, the carrying out of the policy in a practical way has demanded constant care and attention to details, on account of the importance of the project and the large values involved.

It became apparent early in the work that the haphazard acquisition of lands might work serious injury to certain industries and communities. The protection of legitimate industries has been considered in deciding on purchases, and if the acquisition of a certain tract by the State would cause damage, action on such a proposal has been deferred.

The mountain villages depend largely on firewood for fuel. Since wood may not under the constitution be cut on State land in the Forest Preserve, the Commission has occasionally found it necessary to refuse to consider offers of land which was needed to supply wood fuel to local communities.

Owing to the constitutional restrictions against opening up roads across the Forest Preserve, it has been the policy of the Commission to have the rights-of-way of necessary highways excepted by the owner before conveyance of the land to the State.

Where land on the shore of a pond or lake and very valuable for camp-site purposes could be reserved by the owner without detriment to the State's interests, the exception from the purchase of a portion of the camp sites has been permitted, the State, however, taking a substantial part of the shore line. By so doing a large acreage of moderately priced land can be and has been procured without having to pay real estate values for all the camp sites. Moreover, under such an arrangement, the same body of water is made available for private cottages and permanent camps on the privately owned land, and for public use for temporary camping on the State land.

Procedure. A definite procedure to be followed in cases of all lands to be acquired was adopted April 25, 1918, after experience with the first few purchases had indicated the most logical and expeditious method compatible with cautious and well considered action.

The first step is to secure, from the owner or owners of the property, an offer to sell, showing the approximate acreage, its general character, and the price asked per acre.

If the land is situated in a desirable location and the offer indicates that the proposition is reasonable in price, an examination of the property is made by the Commission. The kind of examination depends upon the nature of the tract offered. In the case of a small tract, of say less than 2000 acres, where the valuation is relatively small, an expert timberland appraiser is

detailed to cruise the land and report his findings. If the tract is small, but with a high value per acre, cruises are made by two such appraisers independently, and each man submits an individual report.

When a large acreage is offered, particularly where the question of price is sharply defined, more detailed and scientific information than can be practically obtained by a one-man cruise is necessary. In that case, a valuation survey is made by a competent trained forester and crew. The usual method employed in such a survey is to gridiron the tract with strips 66 feet wide, upon which all timber is actually measured. These strips are located at mathematically regular intervals, so that a definite percentage of the timber is measured. If strips are a quarter of a mile apart (the usual interval in this work), five per cent of the timber is thus measured, and from that the total stand is computed. In running the strips, notes are taken as to the character of the timber, topography, etc., and from the data thus obtained a map is prepared which shows forest types, topography, logging chances, and other information, which may be necessary to arrive at a proper valuation of the property. The report which accompanies the map shows the quantity of timber by lots and by watersheds, and enables the Commission to value the property with practically no possibility of any large percentage of error.

Reports of appraisers and foresters are carefully considered by the Commission and an opinion formed as to the value. Thereupon an offer is made to the owner of the property. If he signifies his willingness to accept the amount offered, a formal agreement is sent him, containing a description of the property and the price per acre, and specifying that it is made subject to the approval of the Commissioners of the Land Office as to purchase, and subject to the approval of the Attorney-General as to title, and of the Comptroller as to description and area. This agreement is practically an option, pending formal action by the Commissioners of the Land Office, the Attorney-General and the Comptroller.

Upon receipt of this agreement properly signed, the Commission is in a position to go before the Commissioners of the Land Office. The following are submitted with each proposal:

1. The signed agreement of sale described above.

2. A map showing location of the land offered and its relation to the Adirondack or Catskill Park boundaries and present forest preserve land.

3. A formal recommendation in writing by the Conservation Commission that the land be purchased at the agreed price, and setting forth briefly the reasons therefor.

4. A copy of reports of appraisal made by representatives of the Commission.

5. A digest of the reports of appraisal, containing information as to the price at which the land was offered, the price at which purchase is recommended, the appraised valuation, and the assessed valuation.

Meetings of the Commissioners of the Land Office are held about once a month and proposals for the sale of land are presented by the Conservation Commission at these meetings. If the recommendations of the Commission are accepted and approved by the Commissioners of the Land Office, the proposal is at once referred to the Attorney-General for investigation of the title, and to the Comptroller for approval of descriptions and areas. Upon the receipt of favorable reports from them, deeds are drawn and title to the property taken by the State.

In case it is important that a property be acquired for forest preserve purposes and no agreement as to price can be reached with the owner, the Commission may resort to appropriation. In that event, a proposal to appropriate is submitted to the Commissioners of the Land Office, and if they approve the recommendations of the Conservation Commission, the necessary papers are served upon the owners and the land promptly becomes a part of the forest preserve. The amount of compensation is subsequently determined by the Court of Claims.

Progress. The table on page 107 is presented to show the progress of the work of land acquisition. Nearly half a million acres (470,085 acres, to be exact) has been offered for sale to the State during the last fifteen months. Of this vast area, which, if in a single square block, would measure 27 miles on a side, ninety per cent has been examined. The Commission has agreed with the owners as to price on 175,214 acres. The Commissioners of the Land Office have approved the purchase of 159,855 acres for considerations aggregating \$932,287.62 — an average of \$5.83 per acre.

In addition, the Commissioners of the Land Office have approved the appropriation of 18,635 acres, making the total increase in area of the forest preserve, when the final steps are completed, 178,428 acres. This, with the present acreage of 1,812,598, gives a total of nearly two million acres.

The work of investigating titles necessarily proceeds slowly, but the Attorney-General has already approved the titles to lands purchased aggregating 29,540 acres. It should be borne in mind that considerable information has been procured in connection with searches of title already completed that will greatly reduce the time consumed in making future searches.

Among the more important tracts approved for purchase by the Commissioners of the Land Office may be mentioned:

In the Adirondacks, 12,912 acres in southeastern St. Lawrence County and bordering on Big Tupper Lake, offered by the Estate of William Barbour; 13,400 acres in southern St. Lawrence County, near Cranberry Lake, offered by the Wanakena Company; 3,318 acres near Cranberry Lake; offered by James Barber; 17,000 acres near McKeever, in Herkimer County, offered by the Iroquois Pulp and Paper Company; 12,000 acres in Fulton County, offered by the Durey Land and Lumber Co., and 2,790 acres near Big Moose Lake, in Hamilton and Herkimer counties, offered by Bissell and Yousey.

In the Catskills, 2,000 acres in southeastern Greene County, offered by Wilbur Bros; 1,500 acres near Hunter Mountain, offered by Charles Lane; 2,200 acres near Panther Mountain, in Ulster County, offered by the Cornell Estate; and 2,300 acres in the northeastern part of Ulster County, on Overlook and adjoining mountains, offered by the First National Bank of Saugerties.

The Commissioners of the Land Office have approved for appropriation, among other parcels, one of one thousand acres situated on the top and steep upper slopes of the McKenzie range, between Saranac Lake and Lake Placid.

About a year ago lumbering operations were started on this tract and the denudation of this mountain top began. The prospect of a lumbering slash upon these conspicuous and favorite mountains aroused residents of the surrounding country, and a number of organizations, including the Shore Owners' Association of Lake Placid, the Association for the Protection of the Adirondacks and the New York State Forestry Association, became

active in urging the acquisition of this tract by the State. The owners of the property are: the International Paper Company, the Champlain Realty Company, a subsidiary of the International Paper Company and the J. & J. Rogers Company. The International Paper Company met the Commission in a spirit of co-operation and even moved out all their lumber crews at considerable expense after their season had begun, in order to give the Commission every opportunity to solve the problem of State acquisition of the land.

The dense stand of virgin spruce upon the property gives it a value in excess of the price which the Commission has felt that the State would be justified in paying. To meet the situation, Professor E. R. A. Seligman, of New York City, President of the Shore Owners' Association of Lake Placid, appeared at a meeting of the Commissioners of the Land Office and, on behalf of the Association, offered to the State the sum of \$30,000 as a contribution by the Association toward the acquisition by the State of this tract. This is the first gift of this sort that has been received under the present bond issue for the purpose of increasing the Forest Preserve, though it is analogous to the gifts of large sums of money to be used in conjunction with State funds for the enlargement of the Palisades Interstate Park along the Hudson.

On account of the unusually high value of the property, and the number of factors entering into a determination of this value, it was considered advisable to have the value passed upon by the Court of Claims. The Conservation Commission therefore made the recommendation, which was approved by the Commissioners of the Land Office, that the land be appropriated by the State. The price per acre will be decided later in the Court of Claims, and the contribution of \$30,000 from the Shore Owners' Association of Lake Placid will be applied upon the cost.

In the Catskills there were approved for appropriation several parcels aggregating about 6,000 acres of contiguous forest land on the high, steep Indian Head Mountain range of southeastern Greene County; and a tract of 4,200 acres on Belleayre Mt. in western Ulster County. The acquisition of these forests has prevented the denudation of important mountain tops, a portion of the slopes of which are within the area upon which New York City depends for its water supply.

Summary of Land Acquisition 1918

	Area offered	Area examined	Area upon which agreement to purchase has been made	Area where appropriation has been recommended	Area approved for appropriation by C. of L. O.	Area approved for purchase by C. of L. O.	Average price per acre of land purchased	Total consideration for land purchased	Total area purchased and appropriated in acres	Titles approved by the Attorney-General, in acres
Adirondack.....	403,307	369,583	151,312	9,300	9,220	144,489	\$5 72	\$827,533 66	153,709	24,306 47
Catakill.....	66,778	54,421	23,902	9,353	9,415	15,366	6 81	104,753 96	24,719	5,296 50
Total.....	470,085	424,004	175,214	18,653	18,635	159,855	5 83	\$932,287 62	178,428	29,602 97

FOREST PRESERVE AREA

JANUARY 1, 1919

ADIRONDACK PRESERVE:

	Acres
Area January 1, 1918	1,702,136.48
Additions:	
Acquisition, private parties.	24,306.47
Acquisition, tax sale, 1915...	728.38
	<hr/>
	25,034.85
Losses	5,573.21
	<hr/>
Net gain	19,461.64
Total	<hr/> 1,721,598.12 <hr/>

CATSKILL PRESERVE:

Area January 1, 1918	110,461.22
Additions:	
Acquisition, private parties..	5,296.50
Acquisition, tax sale, 1915..	1,320.40
	<hr/>
	6,616.90
Losses	354.00
	<hr/>
Net gain	6,262.90
Total	<hr/> 116,724.12 <hr/>

SUMMARY

Adirondack Preserve	1,721,598.12
Catskill Preserve	116,724.12
	<hr/>
Grand total	<hr/> 1,838,322.24 <hr/>

**To check the erosion of Lake George Islands, rocks have been placed
in position for thirty-five cents a ton.**

**New docks have been constructed on the St. Lawrence Reservation
for the use of vacationists.**

PROTECTING LAKE GEORGE ISLANDS

The work of protecting the shores of the State-owned islands in Lake George from damage caused by waves and ice, which was begun in 1917, has been continued throughout 1918. A portion of the work was effectively accomplished on the ice during the latter part of the winter of 1917-18, and this work was continued through the summer after the ice disappeared. Stone was moved on the ice in winter, and placed in position, at a cost of thirty-five cents a ton, which is phenomenally low. The importance of this work to protect the most used camp sites in the entire Forest Preserve can hardly be over-estimated, for if the shores of these islands are not protected now it is only a question of time before the larger islands will be seriously damaged and the smaller islands entirely washed away.

The need for an accurate map of the islands of Lake George has long been felt. The Commission has been unable to find any map on a sufficiently large scale to give accurate information such as is needed to name the different islands with sufficient definiteness that there may be no misunderstanding, and to plan the work of protection in a systematic manner. To meet this need, a survey was practically completed during the year, and accurate maps were prepared showing the shape, size and relative location of each island. From the data thus obtained, a large scale map of the entire lake will be prepared later.

ST. LAWRENCE RESERVATION

A ranger was employed during the season of 1918, whose sole duty was to look after the lands owned by the State in the Thousand Island Region of the St. Lawrence river, comprising the St. Lawrence Reservation. During the summer an inspection of all the improvements on the various State lands in this Reservation was made by a representative of the Commission. As a result of his inspection, the ranger in charge was directed to improve the roads leading from the main highways to the parks at Burnham's Point and Cedar Point. In one case only a few rods of road was required to enable automobile parties to motor to the State land, whereas in the other case about one-half mile of road had to be improved. Both of these were improved to such an extent as to make them safe for automobile traffic, thus

making these lands much more accessible to the motoring public. That this work was appreciated was shown by the increased number of motorists who used these parks after the work was done.

During the winter of 1917-18, the ice wrecked the dock at Burnham's Point so that a new dock is required. Plans for one have been drawn, and an appropriation for its erection is requested.

Inspection also disclosed the fact that the roofs of the pavilions are greatly in need of re-shingling. An estimate has been prepared for this work, and it is intended to have it done during the coming year, if funds are available.

CUBA RESERVATION

The season of 1918 at Cuba Reservation, in Allegany and Cattaraugus counties, was very successful, and a large number of persons enjoyed the advantages offered by the Reservation. A net revenue of approximately \$2,100, after deducting the salary paid to a caretaker, was derived from rentals of cottage sites in this park.

The spillway below the dam at Cuba lake has been going to pieces for some years, and during 1918 plans were made and an appropriation secured for making the necessary repairs. At the time this report is being written, work is in progress on this project, which is being carried on under the direction of engineers of the Division of Waters of this Commission.

JOHN BROWN FARM

The John Brown farm in the town of North Elba, Essex county, has been looked after by the caretaker appointed by the Commission. The property has been kept in good condition and has been visited by a large number of people. Certain repairs and improvements were required, and these were made. The appearance of the place was greatly improved by the building of a new stoop on the house, and the erection of a suitable flagpole.

REFORESTING

General. The Commission has been handicapped in reforesting the past year, the same as in other operations, due to shortage of labor. This difficulty has, to a certain extent, been obviated

by employing women in the nurseries in transplanting the seedling trees, and also by employing them in planting the larger trees in the field. The use of women was not experimental in the field work, because they had been similarly employed for the two previous years.

Two years ago, when the white pine blister rust was discovered in unexpected localities, it was felt that we should stop sowing white pine seed in our nurseries until such a time as more complete facts were available in regard to the spread of this disease and means of its control. The fact that white pine seeds were not sown has not yet seriously hindered our reforestation work, for the reason that we had in our nurseries upwards of 12,640,510 white pines of all ages, and, therefore, had a problem on our hands as to how to use this stock without loss. We have restricted the sale of white pine to private owners, and they have felt indifferent about purchasing them, because, in all cases, we have fully advised the prospective planter of all the information which we had on the subject. We have sold white pine trees to people who already had white pine plantations, for the reason that we felt that the extension of an existing plantation was no serious matter, because, if the owner had to take means to control the disease and he wanted to practise such control on a slightly larger area, it was not a hardship.

During the last two years, extensive experiments and research have been conducted both by this Commission and in cooperation with the U. S. Bureau of Plant Industry, and, as a result, it is the consensus of opinion of foresters and pathologists that, under certain conditions, the extension of white pine plantations may be carried on. The conditions are:

First. That the stock which is to be planted shall be absolutely free from any disease.

Second. That the plantation be made on an area on which there are no currant or gooseberry bushes.

Third. That there be an immune zone of 500 yards around the plantation, which is free of Ribes.

This plan has been carried out during the past two years. We have selected sites on State land where such eradication could be

conducted at a minimum expense, and where the lands were adapted to planting this stock, and have conducted our reforestation with white pine in those places.

On account of the consensus of opinion in regard to future use of white pine, we are preparing to resume sowing white pine in our nurseries the coming spring.

Nurseries. The nurseries have been conducted as heretofore, except that the seed bed nursery at Saranac Inn has, on account of the soil conditions, been put under other crops, in order to rehabilitate the soil.

The total production of all nurseries for the year was 7,236,413.

Reforestation the Forest Preserve. A new high record has been made in the number of acres of denuded forest land planted this year with trees from the State nurseries. That this has been possible under the handicaps that existed this year is a cause for much gratification and indicates that under normal conditions great strides can be made in returning tree growth to denuded State land during the next few years. Some of this work was done by women who worked in the planting gangs. It has been found that the work is well suited to them and that they are thoroughly efficient in it. The total number of acres of State land reforested was 4,213, as compared with 4,059 acres in the best preceding year. The total number of trees planted upon this area was 4,213,000.

State Institutions Received Trees. The policy of furnishing trees from the nurseries without charge to various State institutions for reforestation the land under their jurisdiction has been continued, and during the past year 426,000 trees were so supplied.

Sale of Trees. There has been a decrease in the sale of trees to private land owners because of the difficulty of securing labor to plant them, and the high cost of such labor as was obtainable. It is expected, however, that trees for this purpose will be very much in demand during the next few years and the nurseries are prepared to meet it. The total number of trees sold in this way during the last year was 2,597,785.

WHITE PINE BLISTER RUST

Efforts to suppress the white pine blister rust have been in progress in the State since 1910. During the years 1916 and 1917, control measures were put into operation for the purpose of stopping the westward spread of the disease by the establishment of immune zones. These zones were made immune by the removal of all currant and gooseberry bushes on which the blister rust is dependent in part for its propagation. A careful scouting of the State later proved that the disease had extended to areas westward from the zones, and that this method would have to be abandoned. But during this time specialists in this country and in Canada had reached the conclusion that the disease could be controlled locally at a price that is not prohibitive in sections where white pine is of commercial importance.

In view of what had been learned during the last two years' work in combatting the blister rust, the program for 1918 was made and carried out along the following lines:

(1) Enlarging the local control areas begun in Essex and Clinton counties, and beginning new ones at such places as seemed best.

(2) Establishing a demonstration control area in Warren county which would give data on cost and effectiveness of eradication for different types of ground.

(3) Cleaning up State plantations.

(4) Giving greater protection to forest tree nurseries growing white pine.

(5) Preliminary work promoting local cooperative eradication.

(6) General scouting for a short time in portions of the State where the disease had not been found.

The following eradication areas were worked in 1918:

	No. acres eradicated	Cost per acre	Total cost
Deerhead	1,350	\$1 62	\$2,195 50
Lewis	1,511	2 32	3,514 17
Willsboro	250	1 52	381 00
Highlands	1,214	1 96	2,383 75
Warm Pond	800	2 35	1,885 00

	No. acres eradicated	Cost per acre	Total cost
Paul Smiths	2,009	46	\$936 80
Chubb Hill	864	1 96	1,697 45
Boulder Cut	340	1 63	292 25
Dannemora	300	31	94 00
Lake Clear Nursery.....	180	1 63	553 05
Comstock Nursery	1,000	96	961 58
Saratoga Nursery	275	60	166 36
Wilmington	2,353	2 15	5,072 26
Chestertown	9,344	1 50	13,953 75
Lake George	3,548	1 88	6,697 59
Schroon Lake	3,999	57	2,284 20
Total	29,337	.....	\$43,068 71
Average cost per acre.....	.....	\$1 46	.....

The Deerhead and Lewis tracts include the most extensive native white pine infection in New York State. This was the location of one of the immune zones established in 1917. During 1918 the area eradicated in 1917 was increased, and the same ground re-eradicated in part, so as to insure a high percentage of bushes removed. The Highlands and Warm Pond tracts constitute a solid block northwest from Willsboro, and the Willsboro tract lies closely adjacent. The Paul Smiths, Boulder Cut and Chubb Hill areas include State plantations of white pine. The two former plantations were covered completely, and the ribes were also removed from a surrounding strip which varies in width from one-eighth to one-third of a mile. The State nurseries at Lake Clear, Comstock and Saratoga were likewise protected by eradication of ribes within and around them. In the work on land of Dannemora State prison, inmates were used during the month of May in eradicating ribes on a plantation.

Portions of Lots 20, 21 and 22 of the Jay Tract, three miles north of Wilmington, were selected as a suitable place for carrying out an experiment under natural conditions to determine the extent and rapidity of infection on pines from diseased currant bushes. Within a comparatively few years, a study of conditions

there will make it possible to state definitely the distance to which ribes must be removed from pine trees in order to insure safety for the latter.

At Chestertown, in Warren County, a large tract was selected and worked as a demonstration control area. The purpose here was to supply data on the cost and effectiveness of ribes eradication in different types of land. The types recognized here, and the cost per acre for each, are as follows:

Mature Pine	\$1.20
Immature Pine	1.25
Mixed Conifers and hardwoods.....	1.20
Hardwoods	1.10
Brush land	1.40
Swamp	1.60
Skunk currant	1.45

Cost of eradicating stone walls and brushy fence rows was \$4.75 per linear mile.

These costs are for the work of crews on the ground only, with nothing for transportation or supervision counted in. Additional work of a similar nature should be done, for the reason that in this tract only comparatively small typical areas were chosen, the balance being thrown into general classification.

Another type of work done is that classified as local cooperative control, by agreement between the State Conservation Commission and the Lake George Association, and also the Schroon Lake Association. A beginning was made on the shores of Lake George, Schroon Lake, and Paradox Lake toward removing all ribes from their watersheds. Under the agreement the land owners and the State are to be equal sharers in the expense. This makes one-fourth of the expense for each, since the other half is paid from Federal funds.

The entire year's work was classified under the following projects: Administration, Supervision, Eradication, Field Investigations, Compensation, Education, and Local Cooperative Control.

The blister rust work was administered for the State by one man located in Albany; and the United States Department of Agriculture had a man constantly in the field as an inspector. Two field

supervisors were used, one being located at Keeseville in charge of eradication in Essex county, and the other at Warrensburg in charge of the control area at Chestertown, and later at Lake George. The work of eradication was done by organized crews, each one comprising a foreman and from six to ten laborers. The men of the crews worked side by side, being spaced from four to ten feet apart, the foreman walking a few paces behind, in order to check up the work.

The principal field investigations were carried on in the State by the Federal Department. These were in no way connected with the State work. The Wilmington planting experiment is classed under this project, however, as well as the scouting for pine and ribes infections done late in the season. Since the disease is known to be prevalent in most parts of the State, only a little attention was paid to locating new infections. The scouts sent out in September for an extensive survey of new territory found the disease to be present in the following new localities: south of Jamestown, Chautauqua County; near Adams, Jefferson County; and at Nicholville, St. Lawrence County. Infection on pine was also reported late in the season from Rochester. Other pine infections located during the progress of the work are (1) on the shores of Lake George, (2) in the northeast part of Essex County, and (3) at Wilmington Notch in northern Essex County.

Within the areas eradicated all cultivated currants and gooseberries were destroyed, and whenever requested, the same were paid for according to a schedule of prices established.

The educational work consisted principally of the distribution of bulletins on the subject and of postcards illustrating the appearance of the disease, and the distribution of posters throughout the infected regions. In addition to this, a special agent was employed to prepare the way for local cooperative eradication at Lake George.

FOREST FIRES

Preventive Measures. The usual methods of publicity to educate the public with regard to forest fires were continued. These consisted of fire warnings in railroad time-table folders, telephone directories, and in other similar publications. The motion picture film prepared by the Department has been improved



**All of the main entrances to the Forest Preserve have been marked
with these warnings.**



The fire observation towers on mountain tops serve a fine double purpose, as thousands of vacationists will testify.

and in its revised form has been shown in many places. Cloth notices bearing fire warnings have also been distributed to the members of the field force and posted by them along highways, trails, canoe-routes and by public camping places.

No relaxation in the standard of maintenance set for fire protection on railroad locomotives and rights-of-way has been permitted. Owing to the acute labor situation due to the war, it has been increasingly difficult to secure the degree of efficiency in upkeep desired. Soon after the operation of the railroads was taken over by the United States Government, the matter of fire protective devices on locomotives was taken up with the authorities at Washington, and they gave assurance that existing standards would at least be maintained.

Five thousand inspections have been made of locomotives by the inspectors employed by the Commission, and these men have also been active in checking up inspections made by the railroads themselves, in compliance with the law. For the most part locomotives have been maintained in good condition.

In April, 1918, the Commission was invited to send representatives to witness tests of coal burning locomotives on the Adirondack Division of the New York Central R. R., equipped with a new type of spark arrester known as the Mudge-Slater front end. Two employees of the Commission attended two of the tests. Although it was demonstrated that the proposed improvements in fire protective appliances for coal burning locomotives would undoubtedly make for increased safety, the results of the tests by no means indicated that coal burning locomotives could be safely substituted for oil burners.

In October formal application was made to the Public Service Commission by the New York Central Railroad for relief from the order requiring the use of oil burning locomotives on the Adirondack lines, in view of the alleged greater fire protection afforded by the new devices on coal burners. The Commission is at the time of writing this report engaged in opposing the railroad's application at a series of hearings being held by the Public Service Commission.

The preventive measures outlined above were applied more intensively to the area of seven and a quarter million acres

embraced within the so-called "fire towns" in the Adirondack and Catskill regions. As a further special feature of our campaign of education in connection with forest fire protection, 21 large board fire signs 5 feet high and 7 feet long were purchased and erected at suitable points along the principal highways. These signs were of two types. The first, which was placed near the outer boundary of the forest, informed the reader that he was within the Adirondack (or Catskill) forest and cautioned him to provide for his future enjoyment of the woods by being careful with fire. Signs of the second type were placed beside old burns and pointed the lesson of the devastation wrought by someone's carelessness in the past.

It is now practically impossible for one to motor into the forests without being confronted by at least one of these warnings. They have attracted much favorable comment, and it is felt that they will go far to reduce the number of fires caused by the carelessness of sportsmen and other pleasure seekers in the woods.

Telephones and Observation Towers. About thirty miles of new telephone lines have been constructed by the ranger force, and assistance has been given in the construction of a line needed for fire protection purposes to connect lumber camps to observation stations.

New cabins have been built at two of the observation stations, namely, Vanderwhacker and Balsam Lake Mt. stations, for the accommodation of the observers, where the old camps had become unfit for further use.

Fourteen new steel observation towers were purchased during the year for the following stations in the fire towns of the Adirondacks:

Steel Towers Purchased in 1918

Station	Height in Feet	Station	Height in Feet
Arab	35	Kempshall	35
Azure	35	Mt. Morris	22
Bald	47	Pharoah	35
Black	35	St. Regis	35
Crane	35	Stillwater	47
DeBar	35	Swede	47
Gore	60	Vanderwhacker	35

The erection of the above towers has been completed with the exception of the following stations: Bald, Crane, Mt. Morris and Stillwater. When these are finished, 36 of our 52 observation stations will be equipped with substantial steel towers, each with an enclosed shelter at the top. The first steel towers, purchased in 1916, were not provided with stairs and, in order to make them more accessible to the public and safer for the observers, we have this year built wooden stairs in them.

Steps were taken to establish a secondary observation station on Pillsbury Mt., near West Canada Lakes, in cooperation with the Champlain Realty Co. This station will be manned during periods of extreme dry weather when necessary.

An excellent device known as the Osborne Fire Finder has been developed by the U. S. Forest Service. By means of this instrument a panoramic map of the territory visible from a mountain station may be prepared. This makes it possible, especially for an inexperienced observer, to locate fires more accurately than by the ordinary topographic map. One of the new fire finders was tried out on Poke-O-Moonshine Mountain station during the season, and a map made. It is planned to make similar maps for other stations next year.

The observation stations have been made more accessible to the public by the placing of uniform guideboards on all mountain station trails. A sufficient number of these guideboards, neatly lettered, were purchased during the year, so that every trail is clearly marked in such a manner that anyone without any knowledge of the woods may find his way to the station.

Rating of Rangers. The degree of success attained by any system of fair administration and protection depends largely upon the personnel of the field force. It has been the policy of the Commission to choose competent men for the work and to consider ability in making promotions. During the fire season from 60 to 65 rangers and 52 observers are employed, while in the winter no observers are needed, and the ranger force is reduced to about 25 men.

Within the last year or two it has become increasingly difficult to obtain competent persons for these positions, owing to the fact that the wages paid have been much less than those offered by

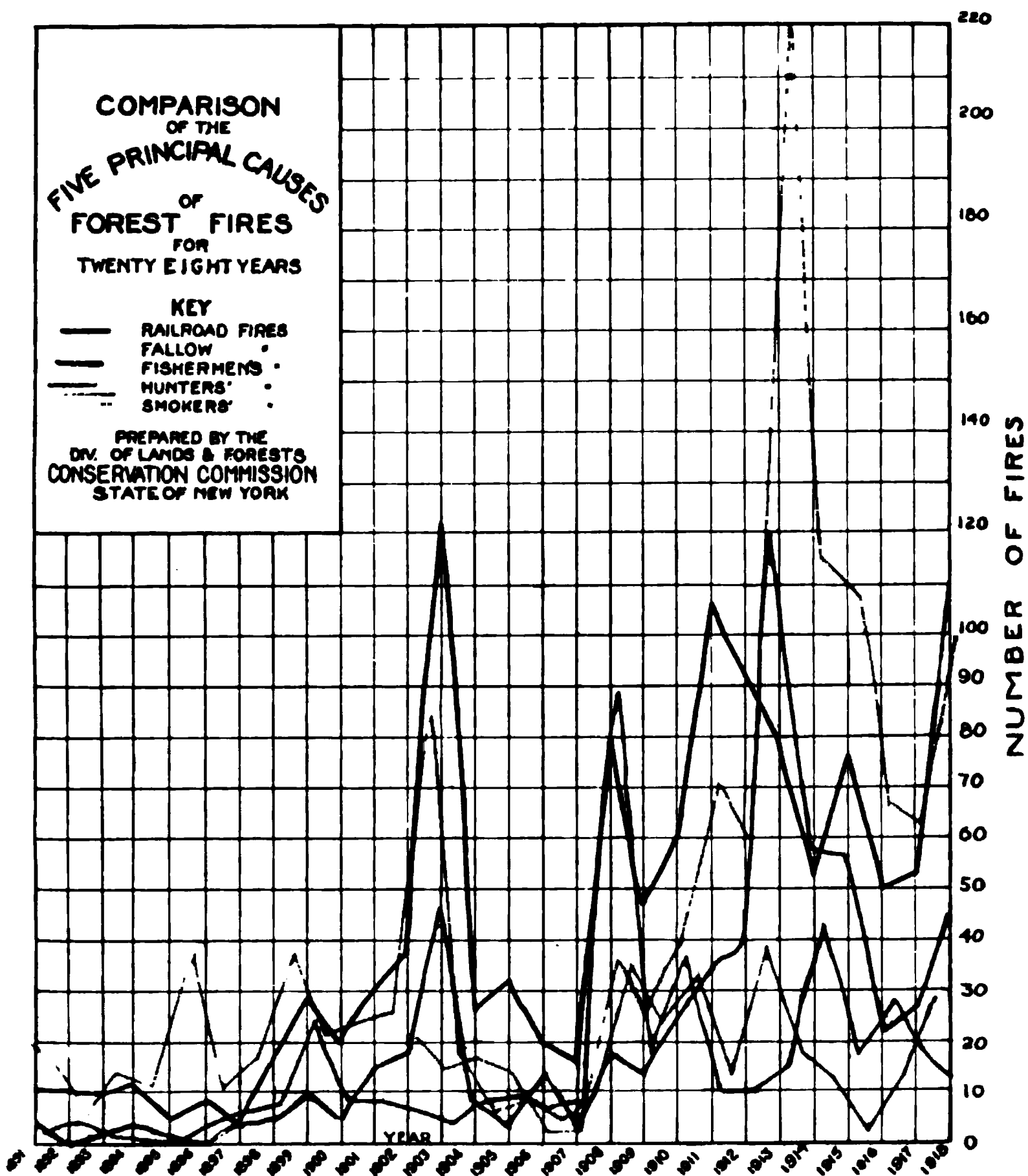
lumbermen and other employers of labor. To offset this, some inducements must be offered to attract men to the State service. In 1917 the policy was adopted of giving men a leave of absence without pay when they could not be retained during the winter, so that instead of being dismissed they would still be retained on the roster, although relieved from active duty. The continuity of employment thus offered has enabled us to hold some competent employees who would otherwise have sought work elsewhere.

Furthermore, for several years rangers' promotions have been made according to merit, as determined by a general consideration of their qualifications and service. The Conservation Law was amended at the 1918 session of the Legislature to provide for the rating of rangers in three grades, and the salary paid depends upon that rating. Early in the year instructions were issued to the district rangers and an outline furnished them to rate the rangers each month on their work during that period. The following subdivisions were chosen as a basis for the guidance of the district ranger in determining the ratings:

	Per Cent.
Field work.....	40
Clerical work.....	10
Enforcement of law.....	20
Qualifications	30
	<hr/>
	100

All rangers were advised of the new system of rating and informed of the details upon which their grades would depend. The grades are to be finally fixed by the Commission after conferring with the district rangers. The men apparently appreciate that this plan will enable each person's ability to receive fair and impartial consideration; and, as the salary paid depends directly on the rating, a stimulus to faithful, efficient work is thus offered.

Fire Losses. Seasons of particularly bad forest fires, accompanied by unusually heavy losses, have occurred in New York State at regular intervals of four or five years, up to and including 1913. The years 1899, 1903, 1908 and 1913 were notable. The regularity of the cycle led us to expect a bad season in 1918; but



FOREST FIRES

	1913 54,796A.	1918 7,354A.
AREA BURNED		

	1913	1918
		\$4,269.00
		\$4,170.00
COST OF FOREST FIRES		

EXPENSE OF EXTINGUISHING

LOSS OF PROPERTY

DIV OF LANDS & FORESTS

CONSERVATION COMMISSION

STATE OF NEW YORK

1918

while there were periods of prolonged dry weather in the early spring and late summer of this year, the fire damage within the Adirondack and Catskill fire towns was kept down to only a small percentage of that suffered in 1913.

Drought conditions of the present year were not quite so severe as in the earlier years mentioned above, but the comparative smallness of the acreage burned is due very largely to the vigilance of the protective force of rangers and observers maintained by the Department.

The fires of the year in the fire towns have been summarized and classified by counties, causes and months of occurrence. The 398 fires reported burned over 7,354 acres and did damage to the extent of \$8,170. The expense of fighting fires was \$6,369. This record is not as favorable as that of the two preceding seasons, but when the dry weather conditions in the spring and late summer of 1918 are considered, the field force is entitled to great credit for keeping the loss down as low as it is. The average area burned by each fire was 18.5 acres, as against 16 acres in 1917. Only a little over one fourth of the total acreage burned was second growth timber and only ten acres of virgin timber, the rest was brush and denuded or waste land. For this reason the damage done to standing timber was relatively small.

A summary of the fires of the year according to months of occurrence is appended hereto, and a similar tabulation of the fires for a period of seven years combined has been prepared. April, August and May were the worst fire months in 1918. The record for the seven-year period indicates the most dangerous months in the following order: August, May, April, June, September, July. However, so much depends upon weather conditions prevailing in each season that such a generalization might be most misleading if applied to any particular year.

Causes of Fires. The fires of the year within the fire towns have been classified by causes as follows:

Locomotives	111
Smokers	100
Fishermen	47

Burning brush.....	35
Campers	24
Berry pickers.....	19
Lightning	19
Incendiary	13
Hunters	13
Burning buildings.....	7
Children	6
Boiling sap.....	2
Lumberjacks	2
	<hr/>
	398

The number of railroad fires is unusually large, actually about 25 per cent. of the total number of fires, although the acreage burned was only 10 per cent. of the total; and as a matter of fact, very little damage was done.

Smokers caused the second largest number of fires and burned about a third of the total acreage. It is regrettable that the proportion of fires caused by carelessness does not decrease more rapidly from year to year. Our campaign of education through fire warnings is directed towards that end, but progress is not as rapid as might be desired.

A large amount of the burned acreage resulted from fires caused by sportsmen, this term including "fishermen," "campers" and "hunters," as well as a large proportion of the "smokers" listed in the above table. The Commission realizes that these persons must themselves help protect the forests and must be fully alive at all times to their responsibility when they are in the woods, and is directing its best efforts to this end, which must be accomplished chiefly by a variety of educational methods.

Violations of Fire Laws. Each year the fire force reports a number of violations of the law. We endeavor through education to keep these down as low as possible. The following table indicates the results for 1918:

SUMMARY OF VIOLATIONS OF THE FIRE LAW, 1918
(Jan. 1, 1918, to November 30, 1918)

OFFENSE	Total number of cases reported	Number of cases closed	Amounts recovered
Failure to lop tops (sub. 2, sec. 54)	15	17	\$1,351 00
Causing forest fires (sub. 3, sec. 54)	53	60	786 31
Setting fires to clear land in violation of sub. 5, sec. 54	30	26	193 06
Failure to maintain railroad patrol (sub. 1, sec. 55) .....	.....	1	350 00
Operating defective locomotives (sub. 3, sec. 55)	1	5	100 00
Totals	99	*109	\$2,780 37

*Some of these reported in 1917.

Long Island Fire Protection. Long Island has suffered severely from forest fires in past years. The Commission has long realized this, but until the present year has not had facilities for accomplishing anything very definite to improve the situation. In the summer of 1918, a personal canvass was made of each town supervisor in the wooded section of the Island. The organization of the work and the appointment of competent fire wardens were discussed with each man, and later the fire wardens themselves were visited.

The need of some means of prompt detection of forest fires became immediately apparent, and sites were chosen for two observation towers such as are used by the Commission in the Adirondacks and Catskills. One of these was located on Telescope Hill just north of Holtsville and the highest point in the central part of the Island; the other on Flanders Hill or South Division Hill, a slight elevation southwest of Riverhead in the eastern part of the Island.

The cooperation of fish and game clubs and land owners was enlisted to help provide funds for buying and erecting suitable towers. Although construction of the towers was not completed until late in November, great interest has already been shown by people on the Island, and the educational effect of these towers will be far-reaching. That they will prove themselves invaluable in promptly detecting fires and consequently reducing damage is a foregone conclusion.

Weeks Law. Thirteen observers on mountain stations were maintained out of the allotment of \$7,142.89 granted New York

State under the Weeks Law for fire protection on the watersheds of navigable streams. These observers were all employed at Adirondack stations. The allotment was increased over that of previous years to permit the paying of higher wages owing to increased cost of living under war conditions.

FOREST PRODUCTS

In accordance with section fifty-eight of the conservation law, statistics of the amount of lumber manufactured and round wood consumed from forests in the State during the calendar year of 1917 have been collected and tabulated. The total amount of lumber sawed amounted to 360,541,000 feet board measure. The amount of round wood consumed was 913,169 cords of 128 cubic feet. Estimating the amount of feet board measure in the cordwood and adding it to the lumber, the grand total is 861,870,781 board feet.

In addition, there were manufactured 10,390,000 shingles, 10,928,000 lath, 52,378,000 heading, 42,378,000 staves, 51,200 poles and 116,700 posts.

The product of 1917 was less than that of 1916 or of 1915. The forests are being rapidly depleted, and it seems probable that statistics for each succeeding year will show a gradual falling off in the consumption of timber from our forest regions. The statistics for 1917 are given in the accompanying table on page 130.

WAR WORK

Wood Fuel Campaign. The campaign to stimulate the use of wood fuel to save coal, which was begun towards the end of 1917, was pushed vigorously until well into the spring. The Commission took charge of the work and was assisted by a Wood Fuel Committee representing the State Grange, the forest schools and the lumbermen. The Farm Bureau, through its county agents, also cooperated most effectively. Through affiliation with the U. S. Fuel Administration, we were able to avail ourselves of the organization of county fuel administrators and to coordinate our efforts with theirs.

A letter was prepared early in January which provided the County Fuel Administrators with a definite program and enabled them to plan a wood fuel campaign for each county, with the

assistance and advice of the Farm Bureau agents and the officials of the Grange.

The need for effective publicity work was recognized early in the campaign. Newspaper bulletins at the rate of probably more than one a week were issued from this office during the winter and early spring and sent to practically every newspaper in the State. In addition to that, 40,000 wood fuel postal cards were printed and distributed to members of the Farm Bureaus, Farmers' Institutes, etc. In order to give more detailed information to owners of woodland, users of wood and the public generally, an 8-page pamphlet entitled "Wood Fuel" was published by the Commission. 25,000 copies of this bulletin were printed and distributed, and plans were made to have these bulletins made the basis of talks before the Farmers' Institutes and the meetings of the Grange.

On April 1, pamphlets were prepared giving directions for using wood as an auxiliary fuel in coal furnaces and open fire places during the early spring and late fall, and a supply of these was sent to every retail coal dealer in the State with the request that he distribute them among his customers.

With a view to giving even wider publicity to the Wood Fuel campaign during the winter of 1918-19, large colored posters were prepared and distributed throughout the State. A motion picture scenario was prepared by the Department and produced with the cooperation of the Wharton Studio at Ithaca. This picture carries a powerful human interest plea to burn wood and save coal. Four copies of the completed film were made and are being loaned for use in motion picture theatres throughout the State.

As a further measure of publicity, and in response to requests received, additional articles on the wood fuel situation have been prepared for magazines, to reach people who might otherwise not be informed of the situation.

When the work was first started, the State was divided into four districts for the administration of the field work in connection with the wood fuel campaign. A field agent was assigned to each district. Two of these districts were taken care of by employees of this Department. Owing to the necessity of starting work on the production of wood fuel as soon as possible, the work of the field agents was necessarily very general in nature. They were

not able to spend a long time in each county, but an effort was made by them to get in touch with the County Fuel Administrator and to assist him in every way possible. It was evident from our reports that some of the counties particularly accomplished a great deal in the way of stimulating the production of firewood.

The fuel shortage has offered unusual opportunities for improving the woodlot. Dead and defective trees, for which in ordinary times there would be no market, could be removed, for even inferior firewood has been marketable. Thinnings and improvement cuttings to weed out the poorer trees could be made at a profit. That this was a practical measure is obvious when one considers that the woodlot owners could sell their products at a profit in addition to increasing the capacity of the woodlot to produce wood for the future.

Timber Census. Assistance has been rendered the U. S. Government through a timber census of the entire state, which was made in cooperation with the U. S. Forest Service and the Society of American Foresters. The primary object of this work was to determine the extent and location of forest products which might be needed to carry on the war.

As a beginning we wrote to the supervisor of every town in the State and requested him to furnish us with a list of names of owners of woodlots containing 50 acres or upwards in his town. As fast as these names were received in this office, a circular letter was sent to each land owner requesting him to fill out a timber census blank (which was enclosed), giving information as to the kind and quantity of timber and wood of various species which his woodlot contained.

Spruce was needed for airplane frames, black walnut for airplane propellers and gun stocks, and locust for treenails to be used in ship construction, and there were numerous other demands for different forest products. That demand has now slackened; but the information we have obtained from woodland owners throughout the State awaits only compilation to be of great use as an inventory of our forest resources.

Black Walnut Trees Planted. The needs of the war brought to light the fact that the black walnut has almost disappeared

from the United States in stands of large area. Much of it has been shipped to Germany during the last twenty years, and has probably been used in the stocks of guns during the present war. The use of black walnut in industry has also been extensive, without systematic replanting. The Commission accordingly conducted a campaign during the proper season in the fall of 1918 to urge the planting of all available nuts in proper localities. A quantity of nuts were also distributed, and game protectors in those parts of the State where the trees grow were instructed to plant all of the nuts that they could find. The attention that has been directed to the need for more black walnut trees will undoubtedly result in their further planting in the years to come.

RECOMMENDATIONS

The establishment of a fire protective system on Long Island marks the beginning of expansion of the scope of our work to include all the important forest areas of the State. This work should be continued on Long Island, and attention should also be given to the problems presented in the forested areas of Orange County. There is an excellent opportunity there for the development of a cooperative fire protective arrangement with the State of New Jersey and the U. S. Forest Service under the Weeks Law.

Maintenance of our present standards of efficiency in the field force will only be possible through paying higher wages. The minimum pay for rangers should be not less than \$100 per month. Where the commonest kind of wood's labor is being paid as much if not more than this, we cannot expect to get competent men for our work for less.

Summary of Forest Fire Losses, 1918, by Counties

COUNTY	Number of fires	Total acreage burned	Total expense of fighting fires	Acres private land burned			Acres State land burned			Value of standing timber destroyed	Value of logs, lumber, etc., destroyed	Value of buildings, fences, etc., destroyed
				Virgin timber	Second growth	Brush	Waste	Virgin timber	Second growth				Brush	Waste
ADIRONDACKS												
Clinton.....	23	722	\$237 55	.....	163	446	.....	92	20	\$1,040 00	.....	\$80 00
Essex.....	23	550	1,238 42	.....	216	56	.....	273	2	255 00	\$1,000 00	175 00
Franklin.....	25	714	420 73	.....	25	387	.....	238	11	105 00	.....	.....
Fulton.....	9	37	28 25	.....	8	25	.....	4	.....	20 00	.....	.....
Hamilton.....	37	821	1,613 92	.....	23	159	.....	110	200	155 00	.....	.....
Herkimer.....	19	516	104 88	.....	13	191	.....	672	10	25 00	.....	800 00
Lewis.....	25	409	293 45	.....	59	205	.....	145	.....	185 00	.....	5 00
Oneida.....	8	45	18 25	.....	.....	15	.....	30	.....	.....	.....	5 00
Saratoga.....	9	109	86 25	.....	.....	107	.....	2	.....	.....	.....	.....
St. Lawrence.....	33	1,014	730 46	.....	69	424	.....	521	.....	10 00	75 00	160 00
Warren.....	30	231	836 25	.....	53	133	.....	40	3	860 00	25 00	250 00
Washington.....	2	18	90 70	.....	15	3	.....	.....	.....	200 00	.....	.....
Total Adirondacks.....	243	5,186	\$5,699 11	.....	644	2,081	.....	1,827	335	\$2,355 00	\$1,100 00	\$1,455 00
CATSKILLS												
Delaware.....	37	646	\$187 30	.....	109	351	.....	159	33	\$185 00	90 00	.....
Greene.....	14	137	59 65	.....	116	.....	.....	7	.....	300 00	.....	.....
Sullivan.....	6	96	72 60	.....	10	15	.....	71	.....	.....	.....	\$1,000 00
Ulster.....	98	1,289	350 84	.....	860	309	.....	112	.....	1,685 00	.....	.....
Total Catskills.....	155	2,168	\$669 89	.....	1,080	675	.....	349	29	\$2,170 00	90 00	\$1,000 00
TOTALS												
Adirondacks.....	243	5,186	\$5,699 11	.....	644	2,081	.....	1,827	335	\$2,355 00	\$1,100 00	\$1,455 00
Catskills.....	155	2,168	669 89	.....	1,080	675	.....	349	29	2,170 00	90 00	1,000 00
Grand totals.....	398	7,354	\$6,369 00	.....	1,724	2,756	.....	2,176	258	\$4,525 00	\$1,190 00	\$2,455 00

Summary of Forest Fire Losses, 1918, by Causes

CAUSE	Number of fires	Total acreage burned	Acres private land burned				Acres State land burned				Value of standing timber destroyed	Value of logs, lumber, etc., destroyed	Value of buildings, fences, etc., destroyed
			Virgin timber	Second growth	Brush	Waste	Virgin timber	Second growth	Brush	Waste			
ADIRONDACKS													
Locomotives.....	20	377	.....	3	138	232	.....	3	1	.....	\$130 00	.....	.....
Smokers.....	75	1,786	.....	330	708	696	.....	1	51	.....	555 00	\$1,085 00	\$220 00
Fishermen.....	43	1,364	.....	143	520	402	.....	16	223	60	1,030 00	.....	10 00
Burning brush.....	19	653	.....	27	284	342	.....	.....	.....	.....	75 00	.....	970 00
Campers.....	23	85	.....	1	73	7	.....	3	1	.....	25 00	.....	255 00
Berry pickers.....	15	185	.....	51	92	41	.....	1	.....	.....	250 00	.....	.....
Lightning.....	19	143	.....	17	22	102	.....	1	1	.....	250 00	.....	.....
Incendiary.....	9	194	.....	.....	35	.....	.....	109	50	.....	30 00	.....	.....
Hunters.....	12	177	.....	16	48	.....	.....	95	8	.....	10 00	15 00	.....
Burning buildings.....	5	116	.....	50	61	5	.....	.....	.....	.....	.....	.....	.....
Children.....	3	106	.....	6	100	.....	.....	.....	.....	.....	.....	.....	.....
Total Adirondacks.....	243	5,186	.....	644	2,081	1,827	10	229	335	60	\$2,355 00	\$1,100 00	\$1,455 00
CATSKILLS													
Locomotives.....	91	391	.....	208	105	52	.....	1	23	2	\$1,515 00	.....	.....
Smokers.....	25	549	.....	267	190	92	.....	.....	.....	.....	125 00	\$20 00	\$1,000 00
Fishermen.....	4	136	.....	100	36	.....	.....	.....	.....	.....	205 00	.....	.....
Burning brush.....	16	766	.....	363	236	129	.....	28	10	.....	300 00	70 00	.....
Campers.....	1	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Berry pickers.....	4	152	.....	95	52	5	.....	.....	.....	.....	.....	.....	.....
Incendiary.....	4	66	.....	16	15	35	.....	.....	.....	.....	5 00	.....	.....
Hunters.....	1	25	.....	.....	.....	25	.....	.....	.....	.....	.....	.....	.....
Burning buildings.....	2	6	.....	1	.....	4	.....	.....	.....	.....	.....	.....	.....
Children.....	3	20	.....	2	12	6	.....	.....	.....	.....	10 00	.....	.....
Boiling sap.....	2	45	.....	25	20	.....	.....	.....	.....	.....	10 00	.....	.....
Lumberjacks.....	2	13	.....	3	9	1	.....	.....	.....	.....	.....	.....	.....
Total Catskills.....	155	2,168	.....	1,080	675	349	.....	29	33	2	\$2,170 00	\$90 00	\$1,000 00
TOTALS													
Adirondacks.....	243	5,186	.....	644	2,081	1,827	10	229	335	60	\$2,355 00	\$1,100 00	\$1,455 00
Catskills.....	155	2,168	.....	1,080	675	349	.....	29	33	2	2,170 00	90 00	1,000 00
Grand totals.....	398	7,354	.....	1,724	2,756	2,176	10	258	368	62	\$4,525 00	\$1,190 00	\$2,455 00

* Less than one acre burned.

Forest Products in 1917

Lumber	Board feet
Spruce	27,727,000
Hemlock	88,700,000
Pine	60,358,000
Maple	49,990,000
Beech	30,420,000
Birch	19,084,000
Basswood	14,815,000
Oak	25,137,000
Chestnut	18,923,000
Elm	7,780,000
Ash	8,614,000
Poplar	5,154,000
Hickory	772,000
Balsam	844,000
Cedar	624,000
Tamarack	333,000
Black walnut	35,000
Sycamore	14,000
Gum	27,000
Minor species	1,190,000

360,541,000

ROUND WOOD

Pulpwood	Cords
Spruce	460,788
Balsam	49,428
Hemlock	53,522
Poplar	44,657
Basswood	3,685

612,080

Wood for acid, excelsior, kilns, etc..... 301,089

Total cords 913,169

Equivalent, B. M. of cord wood..... 501,929,781

Lumber 360,541,000

Total 861,870,781

Pieces	
Shingles	10,390,000
Lath	10,928,000
Heading	52,378,000
Staves	42,378,000
Poles	51,200
Posts	116,700

FOREST PRODUCT BY YEARS

Year	Feet B. M.
1908.....	1,226,754,365
1909.....	1,091,164,710
1910.....	927,933,291
1911.....	972,596,685
1912.....	942,545,269
1913.....	851,391,367
1914.....	855,658,389
1915.....	804,142,388
1916.....	863,932,860
1917.....	861,870,781

LANDS ACQUIRED

Pursuant to section 12 of the Conservation Law, the following list of lands acquired during the year 1918 is submitted:

Adirondack Preserve

Essex County

Old Military Tract

Township No. 11

	Acres
Lot No. 174, N. W. corner.....	70.00

Franklin County

Macomb's Purchase, Great Tract One

Township No. 21

Unallotted parcel, bounded east by lot 74.....	50.00
Unallotted parcel, bounded south by lot 106.....	193.27

Great Tract Two

Township No. 8

Lot No. 1	624.00
Lot No. 14	547.00

Fulton County

Glen, Bleecker and Lansing Patent

Lot No. 38, part	605.58
Lot No. 39, part	1,198.85
Lot No. 47, N. $\frac{2}{3}$	720.80
Lot No. 48	1,883.94
Lot No. 53, sub. 8 part, and sub. 9.....	160.00

	Acres
Lot No. 58, sub. 2.....	104.00
Lot No. 59, southerly part.....	681.00
Lot No. 60, part.....	582.07
Lot No. 63 N. $\frac{2}{3}$	770.08
Lot No. 64, part.....	1,153.12
Lot No. 65, part.....	945.76
Lot No. 66, part.....	987.93

HAMILTON COUNTY

Moose River Tract

TOWNSHIP No. 9

Lot 118, W. part.....	75.00
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Oxbow Tract

Lot No. 204	154.92
Lot No. 279, ex. 62 a. N. W. side.....	300.50
Lot No. 280	217.47
Lot No. 281	236.44
Lot No. 282	236.44

Totten & Crossfield Purchase

Township No. 15

Lot No. 34, S. end	17.30
Lot No. 54	160.00

HERKIMER COUNTY

Watson's East Triangle

Lot No. 25, N. W. corner square.....	390.00
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ST. LAWRENCE COUNTY

Macomb's Purchase, Great Tract Two

Township No. 3

Lot No. 2.	672.00
Lot No. 4.	637.00
Lot No. 8, part	51.00
Lot No. 9, part	238.00
Lot No. 10, part	235.00

	Acres
Lot No. 12.	536.00
Lot No. 16, part	206.00
Lot No. 17, S. E. $\frac{1}{4}$	161.00
Lot No. 18, part	536.00
Lot No. 19, part	664.00
Lot No. 20, part	485.00
Lot No. 21, part	10.00
Lot No. 23, part	200.00
Lot No. 24.	654.00
Lot No. 25, part	517.00
Lot No. 26, part	374.00
Lot No. 27, part	152.00
Lot No. 30, part	250.00
Lot No. 31.	583.00
Lot No. 32.	553.00
Lot No. 33, part.....	499.00
Lot No. 34, part	38.00
Lot No. 39, S. E. $\frac{1}{4}$	145.00
Lot No. 40.	633.00
Lot No. 41, part	599.00
Lot No. 42, part	188.00
Lot No. 45.	656.00
Lot No. 54.	655.00
Lot No. 55.	614.00
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Total Adirondacks.	24,306.47

Catskill Preserve**GREENE COUNTY***Hardenburg Patent, Great Lot No. 26***Divisions Nos. 6 and 7**

Lot No. 18, All in Greene County.....	15.00
Lot No. 19, All in Greene County.....	90.60
Lot No. 20.	96.30
Lot No. 21.	98.80
Lot No. 24.	94.80

	Acres
Lot No. 25, All in Greene County.....	75.90
Lot No. 26, All in Greene County.....	11.00
Lot No. 33, All in Greene County.....	77.80
Lot No. 34, All in Greene County.....	10.20
Lot No. 42, All in Greene County.....	1.60

State Land Tract

Lot No. 34, S. E. Cor. Square.....	62.50
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ULSTER COUNTY

Hardenburg Patent, Great Lot No. 7

Garretson Tract

Lot No. 14, part	100.00
Lot No. 24.	148.00
Lot No. 25, E. 1/2.....	74.00
Lot No. 50, N. 1/2.....	87.00
Lot No. 51, N. 1/2.....	88.00
Lot No. 92, part	120.00

Great Lot No. 8

Lausette Tract

Lot No. 28, N. E. Corner.....	7.00
Lot No. 29, N. 1/2.....	86.00
Lot No. 39.	156.00
Lot No. 40.	160.00
Lot No. 41.	146.00
Lot No. 43, part	80.00
Lot No. 44, part	52.00
Lot No. 45, part	46.00
Lot No. 56, part	106.00
Lot No. 57.	140.00
Lot No. 58.	140.00
Lot No. 59.	152.00
Lot No. 68.	162.00
Lot No. 69.	150.00
Lot No. 70.	188.00

	Acres
Lot No. 71, part	84.00
Lot No. 84, part	80.00
Lot No. 85, part	158.00
Lot No. 86, part	140.00
Lot No. 100, part	36.00
Lot No. 101, part	72.00
Lot No. 102, part	26.00
German Society Lot	322.00

Great Lot No. 26

Divisions Nos. 6 and 7

Lot No. 17.	112.20
Lot No. 18, All in Ulster County.....	100.70
Lot No. 19, All in Ulster County.....	13.30
Lot No. 25, All in Ulster County.....	14.40
Lot No. 26, All in Ulster County.....	90.80
Lot No. 27.	110.10
Lot No. 28.	110.10
Lot No. 33, All in Ulster County.....	28.90
Lot No. 34, All in Ulster County.....	91.10
Lot No. 35.	108.90
Lot No. 36.	118.20
Lot No. 37.	117.00
Lot No. 42, All in Ulster County.....	103.60
Lot No. 43.	110.10
Lot No. 44, W. $\frac{1}{2}$	53.40
Lot No. 45, W. $\frac{1}{2}$	61.80
Lot No. 46, W. $\frac{1}{2}$	61.90

Total Catskills 5,296.50

DIVISION OF WATERS

WATER POWER POLICY

The necessity for a vigorous, constructive, State policy regarding the development of water power has already been emphasized in another part of this report. In former reports and in other documents and papers the subject has been discussed from time to time. Nevertheless, even at the cost of being charged with repetition, the Commission desires to state here certain basic principles which it believes should be adopted as the State's fundamental water power policy. Some of these principles have already been settled, while the status of others remains a subject of discussion. The fundamental points which the Commission believes should characterize the State's policy will be briefly discussed in the following paragraphs.

Regulation of Stream Flow. The first physical essential in the development of latent water power, both State and privately owned, is regulation of the stream flow, in order that the enormous quantities of flood water, that are now wasted, may be held back in suitable storage basins for release during the periods of drought. Such a regulation of stream flow is but a logical continuation of the State's policy of protecting its watersheds, which has for many years been so successfully carried out in the Forest Preserve areas. New York State maintains in the vital sections of the Adirondack and Catskill Mountains an immense Forest Preserve which is valued at approximately \$40,000,000, and is now engaged in the expenditure of \$7,500,000 to increase the extent of the State's holdings. One of the primary objects of the Forest Preserve is to protect the sources of the power rivers and regulate their flow, in so far as this can be regulated by the maintenance of forest cover. Forests are conservers of ground water — water that is soaked up by the sponge-like humus of the forest floor. The humus prevents rapid run-off, and the forest cover, which the trees provide, prevents rapid evaporation.

Conservation of ground water in the forest, however, can never more than partially regulate stream flow, and is accordingly but one part of the great task with which we are confronted. As the Commission has heretofore pointed out, "water is conserved in the forests that it may reach the streams, and to release control of it there is to leave it when it has entered upon its stage of greatest usefulness. Throughout the entire water course the interest of the public is paramount. Power is developed for public use, and water is diverted to the canal systems of the state for public transportation purposes. In the face of this public interest, it is imperative that regulation of the streams be given the same careful attention by the State that conservation of water in the forest receives. This is particularly important on those streams whose watersheds are not heavily wooded and which are immediately affected by rain fall and dry weather."

The Conservation Commission believes that the storage of water on a sufficiently broad basis to accomplish the purpose of adequate stream regulation must be on so large a scale and is so intimately bound up with many problems of public policy and interest that it can be properly undertaken only by the State itself. In so far as State lands are involved, this has become the fixed policy of the State by virtue of an amendment to the Constitution, known as the Burd Amendment, adopted November 4, 1913, which provides that storage reservoirs upon State land "shall be constructed, owned and controlled by the State. * * * Any such reservoirs shall always be operated by the State."

Assessment of Costs of Storage Reservoirs. The principle that the cost of construction of storage reservoirs for stream regulation should be assessed upon those benefited, in proportion to the extent of their benefits, is already established in the Constitution by the Burd Amendment, provided State land is flooded, and is not open to further change unless the Constitution itself is amended in this respect.

Article seven, section seven, states that "the expense of any such improvements shall be apportioned on the public and private property and municipalities benefited to the extent of the benefits received."

It is apparent that this sentence makes no provision for any payment to the State on account of construction, beyond that actu-

ally incurred by the State in the course of the construction. It is equally clear that where State property is benefited by such improvements, the State itself must pay a proportion of the construction cost, determined by the extent of the benefit to State-owned property. The Conservation Commission is in thorough accord with this principle, and believes that it should apply to all storage projects for control of stream flow by State agency.

Assessment of Benefits. In the regulation of stream flow the State will render certain definite and valuable services to both public and private property and municipalities situated below the regulating dams. On many of the water courses, the storage reservoirs will flood land already owned by the State. Moreover, it is probable that in the working out of water storage it will become necessary for the State to acquire all the lands flooded before the reservoirs are constructed, so that in the last analysis all of the land within the area of the reservoir will be State owned land, whether it is already part of the Forest Preserve or not. Part of the benefits derived from stream regulation will thus depend upon the use of State property for reservoir purposes. The State will render other services which are immediately apparent upon consideration of the various legal, financial and administrative steps that must be taken in bringing about stream regulation. After the work is completed, there will be expenses of maintenance and operation from year to year. The Constitution requires the State to construct the reservoirs and to maintain and operate them, when Forest Preserve land is used, and it is logical that the Constitution should further require the beneficiaries to pay a reasonable return to the State for the benefits derived from the construction and operation of the public works involved. This provision is stated in that part of Article seven, section seven, which says that "the legislature shall provide for a charge upon the property and municipalities benefited for a reasonable return to the State upon the value of the rights and property of the State used and the services of the State rendered, which shall be fixed for terms of not to exceed ten years and be readjustable at the end of any term."

The Conservation Commission believes that the legislature should provide, with a considerable degree of definiteness, for

the assessment of charges upon those benefited. In every work of this sort, it is necessary to know in advance, within reasonable limits, not only the first cost of the work, but also the annual carrying charges. The Commission believes that it will be very difficult to induce private capital to interest itself in development work of this kind, unless it understands in the beginning the conditions which it must face. In fact, it is probable that one of the important factors which has operated to retard the development of water power in New York State in the past has been the lack of certainty regarding the State's policy. This has resulted in a reluctance on the part of those who would develop water power properties to invest their capital, without being able to learn in advance the attitude of the State toward assessments for water storage benefits. Money invested in water power development is permanently invested, and the business can never be discontinued without the almost total sacrifice of the original outlay.

Charges of this sort must, by their very nature, be determined in every case upon the basis of the special factors governing each situation — such factors as the amount of power actually developed at a site, the conditions under which it is developed, the amount of undeveloped power, nearness to market, and other economic and engineering considerations which govern the value of a particular site. Nevertheless, in spite of a great difference in power values, on account of these variable factors, it should be possible to establish definite methods of assessing all benefits, of whatever character, so that the beneficiaries may know with reasonable assurance the limits within which charges will fall.

Power Dams at State Owned Sites. The Conservation Commission recommends that the State itself construct power dams upon the power sites owned by the State.

Power dams upon State owned sites should, of course, be constructed only as rapidly as it appears possible to find a market for the power to be generated at those points. In other words, the Commission does not believe that the State should enter upon the extensive construction of power dams wherever opportunities exist, but rather that the policy should be definitely established that, as rapidly as it is possible to absorb the power from them, the State will build these dams as permanent improvements.

In many cases, the state has only a partial interest in the power site, as by owning one side of the stream, or a portion of the available falls, while the balance of the interest is privately owned. In such cases the Commission believes that the privately owned interest should be acquired by the State. It would be manifestly inadvisable for the State to enter into a partnership arrangement for the development of an individual power site. It is equally clear that the State should never part with the fee that it now holds in such sites. The only proper solution appears to be for the State to acquire outstanding interests in these properties. The State can then construct power dams upon such sites without any of the complications involved in dual ownership.

State Owned Power Sites Should be Leased. The Conservation Commission believes that, having accomplished the regulation of stream flow, and having constructed the permanent improvements necessary upon the State owned power sites, by the building of power dams, the activity of the State in hydro-electric development should cease, and that succeeding steps, the generation and transmission of power and its delivery to the consumer, should be undertaken by private or municipal enterprise by lease from the State on proper terms.

The Commission does not believe that we have yet reached the point, if, indeed, it will ever be reached, where the theory of State ownership can be successfully worked out in this field. If it should be adopted at this time, it would become necessary for the State either to undertake the development, distribution and sale of electric energy, in competition with the private enterprise that is now engaged in this work, or else to purchase or appropriate the properties of all the companies that are now established in this business. Either course would involve the State not only in an enormous expenditure, but also in a stupendous experiment, the end of which no one can foresee. It would plunge the State into a maze of political, social, economic and financial problems of a magnitude and intricacy that may well make us pause.

In the opinion of the Commission, the only exceptions to the general proposition that the State itself should not go into the actual generation of power are found on the St. Lawrence and Niagara Rivers. These streams are boundary waters and the power problems that they present are complicated by questions

affecting the Dominion of Canada and the federal government. Because of this, it is possible that the most satisfactory development of the water power projects located upon them would include not only the building of the power dams and other necessary stream structures as permanent improvements, but possibly also the construction and equipment of the power plants, to be operated either by lessees or by the State itself.

Benefits to the Public. In any consideration of this problem, it is advisable to keep clearly in mind the fact that power companies are already established upon many of the largest rivers, with distributing systems reaching to wide markets, but that they nevertheless have insufficient water during the dry periods to properly supply those markets without the aid of steam auxiliary plants. The regulation of the flow of the rivers by storage reservoirs constructed by the State will immediately be felt in more efficient and economical operation of plants already existing. Stream regulation will, in addition, immediately encourage the building of additional hydro-electric plants and transmission lines at many points. The benefits of the efficient administration of these power plants and the increased advantages which they will derive from stream regulation can be realized by the public through regulation of rates and service by the Public Service Commission.

The public will receive, in addition to increased power and lower rates, a substantial revenue from the lease of power privileges at reservoir dams and power sites on State land. That this revenue will be a very material factor in the income of the State is evident when one considers that the amount of undeveloped power in which the State now has some interest is 993,200 horsepower.

The Constitution provides, as above stated, for "a reasonable return to the state upon the value of the rights and property of the state used and the services of the state rendered, which shall be fixed for terms of not to exceed ten years and be readjustable at the end of any term."

How much such charges should be looked to for an actual revenue to the State, over and above maintenance and operating

expenses, is for the legislature to determine when it provides, as required by the Constitution, for a return to the State.

The Commission believes that this return should be adequate and substantial, but nevertheless sufficiently reasonable to encourage development. One of the greatest needs of the reconstruction period, as it was of the war period, is for power — actual kinetic energy, and not potential, undeveloped power sites. A realization by every interest concerned of all that is implied in these statements should be effective in ending the procrastination, delay and obstruction that have thus far thwarted every attempt to achieve results in power development in New York State.

Summary of Power Policy. All of the points discussed above, which the Conservation Commission believes should characterize the State's permanent, fundamental water power policy, may be briefly summarized as follows:

I. Regulation of stream flow by the State.

II. Assessment of the cost of stream regulation upon public and private property and municipalities benefited in proportion to their benefits.

III. Provision for a reasonable return to the State upon the value of the rights and property of the State used and the services of the State rendered, by charges levied upon the property and municipalities benefited, such charges to be fixed for terms of not to exceed ten years and to be readjustable at the end of any term.

IV. Construction by the State of power dams upon State owned power sites.

V. Leasing of power privileges at State owned power sites to private power companies or to municipalities, with provision for periodical readjustment of the rental charges, with the possible exception that upon the St. Lawrence and Niagara Rivers the State should build and equip power plants to be operated either by the State or by lessees.

VI. Generation, transmission and distribution of power to be conducted by municipalities or by private enterprise, subject to regulation by the Public Service Commission.

MAKING THE POWER POLICY EFFECTIVE

Upon proceeding to a consideration of the steps necessary to carry out any water power policy of the State, it becomes apparent immediately that three distinct situations are presented, each one of which involves problems that are peculiar to itself.

First, there are the surplus waters of the Barge Canal, which are a source of a considerable amount of potential water power, but which under the law cannot be leased, sold or used for this purpose until the legislature has, by general laws, made provision therefor. After such provision has been made, the waters of the Barge Canal can then be used for power purposes only after all of the needs of navigation have been met.

Second, the State has an enormous amount of undeveloped water power in the St. Lawrence and Niagara Rivers, which are boundary streams. The development of this power accordingly introduces questions affecting the interests of the Dominion of Canada and the Federal Government. Inasmuch as the power available in these two places will amount to approximately two-fifths of the total water power of the State, when it is fully developed, and is moreover available in large blocks, it is apparent that the questions presented by the boundary streams are pressing for early solution.

Third, the water storage problems presented on the interior streams of the State offer difficulties which must be met in a different way than those found on the Barge Canal or the boundary waters.

It is unnecessary in this place to attempt to fully discuss all of the legal and other difficulties presented by the three situations outlined above. The Commission desires, however, to point out a number of the more important things that it believes should be done by the legislature if the decks are to be cleared and the power needs of the State are to be met. These points are contained in the following paragraphs.

Leasing of Barge Canal Powers. A bill was introduced at the last session of the legislature to provide for the leasing of the surplus waters of the Barge Canal. As originally introduced, the bill made it possible for municipalities, as well as private

corporations, to bid for the surplus waters, but as finally passed, it was amended in such a way as to prevent municipalities bidding for the power. The bill was vetoed by the Governor on this account, with the statement that he was leaving it for another session of the legislature. The Conservation Commission accordingly respectfully recommends that legislation be enacted for the leasing of the surplus waters of the Barge Canal, without any discrimination against municipalities. This will clear up the entire situation with regard to the surplus waters of the Barge Canal and will meet, in part, the urgent need for power in some of the State's most densely populated industrial centers.

Revision of Water Storage Laws. Two separate laws are now upon the statute books for effecting stream regulation by storage reservoirs. These are Article 7 and Article 7-a of the Conservation Law. While both of these laws embody many excellent features, the Conservation Commission believes that neither of them adequately meets the needs of the situation. In fact, this seems apparent on the face of things, as Article 7 has been on the books since 1911 without any storage project having been put through under it. Article 7-a has been effective since 1915. One petition was presented under this article, but after a number of hearings, it was withdrawn by the petitioners.

Article 7 permits the initiative in matters of stream regulation to be taken by the Commission, which for the purpose of river regulation, consists of the Conservation Commissioner, the State Engineer and Surveyor and the Attorney-General. It also provides for the initiative being taken by the petitioners in the district to be affected. Article 7-a, however, makes no provision for the initiative being taken by the State itself. It is of the utmost importance, the Commission believes, that stream regulation now be taken up by the State in a vigorous, constructive manner, with a definite centralization of responsibility for action.

Article 7-a provides for a dual jurisdiction in matters of stream control. The Commission mentioned above exercises certain functions, while other powers are conferred upon a local river regulating board. It is believed that a much more simple and workable system can be devised, and one which will better protect the interests of the State.

Both Article 7 and Article 7-a provide that the Commission having jurisdiction over storage matters shall consist of the Conservation Commissioner, the State Engineer and Surveyor and the Attorney-General. The creation, in addition, of a local board is not only in the direction of decentralization of authority and responsibility, which is contrary to modern tendencies in State government, but also creates such a multiplicity of directing heads as would very materially increase the difficulty of obtaining the unified control and use of hydro-electric energy that is so important if every part of the State is to receive the full benefits from development and proper distribution of power. Comparatively recent advances in the art of electrical transmission have made interconnection of systems entirely feasible and such interconnection was resorted to at federal instigation during the war. With this interconnection, power developed at one point where water is available may be transmitted to a distribution system far distant which, for the moment, has insufficient water. The policy adopted in New York State should permit of a centralized control not only of preliminary plans for utilization, but also of the actual utilization and wide distribution of power made available by such storage.

The Commission believes that to accomplish these purposes a Commission composed as provided in Article 7 and Article 7-a has a great deal of merit. The Conservation Commission has a wide knowledge and experience in matters of rainfall, run off, stream control and hydro-electric engineering that are absolutely essential. The State Engineer and Surveyor is able to supply an organization of experts in matters of engineering construction that it seems unnecessary to duplicate in any other branch of State work. In the solution of the complicated legal problems that will be presented, the fact that the Attorney-General is a member of the Commission will be of the utmost advantage to the State.

Authority to Lease Power Sites. The Commission is at present without proper authority to lease State owned power privileges, and no adequate provision has yet been made for the building of power dams. The question of the building of power dams and the leasing of power privileges should accordingly have the attention of the legislature and the Commission should be given adequate authority in the premises.

Power Development and Transmission in the Forest Preserve. The Burd amendment to Article seven, section seven, of the Constitution permits the flooding of not more than three per cent of forest preserve land for purposes of water storage and stream regulation. This amendment, however, only partially meets the power situation, since a large number of the State owned power sites are upon lands of the forest preserve, but cannot be developed as power sites under the present restrictions of article seven, section seven. It seems clear that in this respect the State is standing in its own light, and should complete what it has already begun in the Burd amendment, by passing another amendment to permit the erection of power dams and power houses and the development of power on the State owned land and its transmission across State land.

Unused Water Power Charters. The Commission recommends that all water power charters heretofore granted to companies for water power privileges receive the attention of the legislature, for the general purposes of repealing unused charters and placing proper limitations upon used charters.

Boundary Waters. When every effort of Federal and State governments and of the industrial organizations of the country were directed to winning the war, attention was focused upon the vast opportunities for water power development on the boundary streams of New York State. An application for permit to develop water power on the St. Lawrence was presented to the International Joint Commission during the year and hearings were held upon this application. The federal government urged the granting of the application, placing the whole matter on a "win the war" basis. The State of New York was represented at these hearings by the Counsel to the Conservation Commission and the Division Engineer. While it was realized by the Commission that the foremost need of the moment was to win the war, it was nevertheless felt that it would be unwise to permit the rights of the State to be permanently impaired, and representations to this effect were accordingly made at the hearings, as a result of which the International Joint Commission granted the application upon a "win the war" basis and reserved the right to take new steps at the end of the war.

Now that the war is ended, the Commission feels that one of the most important measures to be taken up is that of clearing up this entire boundary water question. The situation on the St. Lawrence River is acute. The Canadian authorities, both of the Dominion and the Province of Ontario, are giving the subject of the development of power on the St. Lawrence very great attention and study. The Province of Ontario has a party of engineers devoting its time to the study of the control of the levels of Lake Ontario by means of a dam in the vicinity of Waddington, with the expectation of developing and using the water power at this point and at points further down. The State of New York should co-operate in these studies.

The attitude of the Dominion of Canada, as shown by an Order in Council, is for the Dominion to build these dams for the purpose of canalizing the St. Lawrence River for navigation purposes, leaving to the province within whose jurisdiction the dams are located the right to develop the power.

The Conservation Commission feels that the State of New York should keep pace with every step taken by its neighbors across the river to utilize the immense power of the St. Lawrence, and should co-operate with the Dominion of Canada and the Province of Ontario to the utmost in surveys, studies, plans and actual constructions. This will, of course, involve determination of the rights which the State has, as distinct from those of the federal government, and co-operation with the federal government in effecting the power utilization of the river without impairment of navigation.

The Commission recommends an appropriation of \$10,000 for the purpose of co-operation with the Canadian authorities and the federal government in the study of the St. Lawrence River.

The situation on the Niagara River presents problems somewhat analogous to those on the St. Lawrence. The Commission believes that the crying need for additional power in the Niagara district, extending eastward as far as Syracuse, should stimulate action by the State. By the construction of controlling weirs in the Rapids above the Falls, so as to throw toward the shores some of the water now passing over the Horseshoe Falls and causing their rapid recession, the scenic beauty can be enhanced, while

at the same time large additional volumes of water may be utilized for power purposes.

It has been pointed out on another page that the special problems presented by the boundary waters may make it advisable for the State itself to build and equip power plants on these streams, to be operated either by lessees or the State.

Through the action of this Commission such limitations were placed upon the charters of the companies operating at Niagara Falls in the bills permitting their reorganization, passed by the last legislature, as will define their rights.

Stream Regulation a Public Use. Constitutional authorities have expressed some doubt regarding the adequacy of the theory of the State's duty to protect the health and safety of its citizens as a foundation upon which to proceed with stream regulation for power development. It accordingly seems advisable, in order to make the matter more certain, to amend the constitution by declaring such regulation to be a public use.

Summary of Necessary Water Power Legislation. Much of the legislation that will be required before the water power policy outlined on the preceding pages can become effective is already clearly understood, and the suggestion is accordingly made that it be enacted as quickly as is consistent with due consideration of the various points by the legislature. The Commission respectfully recommends that the legislature now take the following action:

1. The immediate passage of appropriate legislation authorizing the Superintendent of Public Works, with the approval of the Canal Board, to dispose, for proper returns by lease, of surplus water power created as a result of the construction of the Barge Canals.

2. The revision of Article 7 and Article 7-A of the Conservation Law, to provide more effective means for the State regulation of stream flow by storage reservoirs, and for the assessment of the costs and the levying of charges upon those benefited in the manner required by the constitution.

3. The enactment of legislation to empower the Commission to construct power dams at sites where the State owns some

interest, and to lease for proper rentals the potential power created both at such power dams and at storage dams, the leases being subject to revision at regular intervals.

4. The passage of a bill to amend the constitution to provide that the water powers of the State shall forever remain the property of the State, and may be leased only for proper returns that are subject to revision at reasonable intervals.

5. The passage of a bill to amend the constitution to provide that nothing contained in Article Seven, Section Seven shall be held to prevent the development of power at State-owned power sites, or the transmission of power across State land, in the Forest Preserve, under proper regulation.

6. The repeal of all water power charters heretofore granted by the legislature and still unused, and legislation clearly defining the limits of rights under charters in use.

7. The appropriation of \$10,000 to the Conservation Commission for the preparation of plans for the development of power in the St. Lawrence River in co-operation with the Dominion of Canada, the Province of Ontario and the Federal Government.

8. The passage of a bill to amend the constitution, by declaring that the regulation of stream flow by storage reservoirs is for the public welfare and use, as well as for the public health and safety.

WATER POWER AND STORAGE SURVEYS

On account of the depletion of our engineering force by enlistments in the military and naval forces and the inability to secure competent and experienced men to maintain the organization at its usual strength, it has been impossible to continue the field work in connection with the investigations of the water power resources of the State during the past season. Up to the present year, surveys have been made to determine the amount of power on the more important streams, namely, the Hudson River, Genesee River, Black River, Oswegatchie River, Grass River, Raquette River, St. Regis River, Ausable River and Saranac River. Comprehensive separate reports have been made and published on the subject of the Water Power Possibilities of the Oswegatchie, Raquette, St. Regis and Saranac Rivers. Work is progressing upon the preparation of

the reports of the Ausable, Grass, Black and Hudson Rivers. In the case of the Hudson River, which has been the subject of somewhat detailed reports from time to time, the work in hand is a revision of the former reports made desirable by more detailed information in regard to minor projects and more extended stream-flow records.

POWER STUDIES

St. Regis River. Studies of the power possibilities of the St. Regis River were completed during the past year and the report of the Commission is now in the hands of the printer and will be ready for distribution at an early date.

Ausable River. Office studies of the power possibilities of this stream were continued during the past year. These studies have indicated that additional data should be secured in the field in regard to the feasibility of providing additional storage reservoir capacity on the headwaters of this stream. The reduction of our force has prevented making the surveys needed to secure the desired information for the completion of this report.

Grass River. A survey of the water resources of this stream was made during the season of 1917. Preliminary office studies made during the past year indicate the necessity of supplementing the survey of 1917 by a detailed survey of at least one additional reservoir basin before a comprehensive report can be prepared. It was desired to make this survey during the past season, but this was also dropped on account of our not being able to place a survey party in the field.

Black River. Office work in connection with the preparation of the report upon the Black River water powers has been continued and it is expected that the report will be completed in the near future.

Other Studies. Estimates of the amount of undeveloped water power in the State of New York were prepared and data furnished to the United States Fuel Administration for use in connection with its efforts to solve the problem of additional power for the purpose of prosecuting the war.

In view of the much more elaborate stream flow records which are now available, extensive studies were made to determine the

amount of benefit which would accrue to the water powers upon the Hudson river by the construction of storage reservoirs on the upper watersheds, namely, Sacandaga reservoir, Indian Lake reservoir and the Schroon river storage. The studies will be supplemented by considering the storage possibilities of the smaller reservoirs on the headwaters, surveys of which were made in 1917.

DRAINAGE

Petitions for Drainage. Two petitions for the drainage of swamp lands were received by this Commission during the past year. These projects were both located in the vicinity of Ogdensburgh, St. Lawrence County, N. Y. Upon receipt of the petitions a reconnaissance was made by an assistant engineer, who recommended that a survey be made to determine their feasibility. On account of our limited engineering force, it has been impossible to make these surveys.

Pendleton Drainage Project. Detailed plans were prepared, estimates of cost made and a hearing held in the matter of the Pendleton Drainage Project in the towns of Pendleton and Lockport, Niagara County, N. Y. Although the owners of more than 50 per cent. of the property affected had signed the petition, little or no sentiment in favor of carrying out this project developed at the hearing, which was adjourned with the understanding that, if 60 per cent. of the property owners within the district desired to proceed with this work, the Commission would take up the matter at some future date.

Article VIII-A. A new Article, VIII-A, was added to the Conservation Law during the last season. This article was designed to enable the owners of agricultural lands to initiate proceedings to procure an easement or right of way for the purpose of providing drainage across the lands of adjacent owners upon the presentation of a petition to this Commission. The Commission is authorized to hold a hearing to determine the necessity for such drainage and for occupying such lands and properties and shall assess the damages therefor. No petitions under this article have as yet been received.

RIVER IMPROVEMENT

Canaseraga Creek Improvement. Maintenance operations, consisting chiefly of the construction of pile and brush bank protection and the erection of dikes to prevent the overflow of flood waters, were carried on until July, 1918, when lack of funds caused their discontinuance. This work was carried out under Article 7 of the Conservation Law, under which the Commission acts on the petition of the interested parties, as their agent throughout the proceeding. The law provides that the cost of the work shall be met by the issuance of bonds which, together with interest and other charges, are to be paid by levies of taxes upon the land benefited in proportion to the benefits. The maintenance is also to be done by the Commission and paid for by taxes levied in the same way. The Commission completed the work and made the determinations of benefits as required by the statute, and the taxes were duly levied. The property owners, however, elected to review the determination of the Commission by certiorari proceedings. The property was sold for the taxes in 1917, and was bought in by the bond-holders. This furnished sufficient funds to carry on maintenance and pay the accrued interest and bond falling due. In 1918 the property was again advertised for sale, but there were no bidders at this sale. Consequently, there were no funds for maintenance work. The Commission is using every effort to bring this matter to a final determination.

SUPERVISION OVER DOCKS AND DAMS

Jurisdiction over the docks and dams of the State is conferred upon the Conservation Commission by section 22 of Article III of the Conservation Law.

With rare exceptions, the provisions of this portion of the Conservation Law have been cheerfully complied with. It seems highly desirable, however, that the section be further amended to enable the Commission to require the removal of channel obstructions, which would, in its opinion, cause the impounding of water or the diversion of the course of the stream, thus endangering life and property of others.

During the year 1918, the Commission, upon the recommendation of the Division of Waters, has approved the plans and specifications for thirty-three dams and two docks. All plans and specifications submitted are given a thorough technical examination, which usually leads to requests for revisions, either through correspondence or an interview with the owner's representative. A report is then written, covering the information derived from such examination and an investigation of all sources of information readily available.

The location and inspection of existing structures was continued by four summer employees under the direction of the Inspector of Docks and Dams. The assistants locate the docks and the dams, and report the condition and certain measurements and data required. The inspector personally inspects structures reported as unsafe and also new structures. During the past year he has made two hundred and eighty-eight such inspections.

WATER SUPPLY AND SEWERAGE

One of the primary functions of this Commission is the apportionment of the sources of potable water supplies among the various communities of the State, and the protection of the purity of such waters. The Commission also has jurisdiction over the construction of sewerage systems and the disposal of sewage and industrial wastes as affecting the sanitary condition of public water supplies and fish life in the streams. This jurisdiction, however, is somewhat vague and uncertain. The law should be so amended as to clear up these uncertainties and to give the Commission such discretionary power as is needed to provide for the disposal or treatment of sewage and industrial wastes in such manner as to effectively safeguard the purity of public water supplies and to prevent the gross pollution of streams now so prevalent throughout the State.

During the past year there has been very little activity in the construction of water supply systems and purification plants. Only four water supply applications have been filed and none of these has entailed any material amount of new construction. This has been due largely to the restrictions of the Capital Issues Committee of the Federal Government in prohibiting the issuing of securities

for new construction, and also to the prevailing high prices for labor and structural materials. Although little new work has been started, ten water supply systems, which were under construction at the beginning of the year, have been completed and permits to operate have been issued. Several other systems have been substantially completed during the year and will be placed in operation as soon as minor requirements have been met. There has been slightly greater activity in sewerage construction, eighty one sewerage applications having been filed during the year. Most of these, however, have contemplated only minor extensions to existing sewerage systems, though there have been a considerable number of disposal plants for institutions, schools and factories. There have also been several applications for the approval of plants for the disposal of industrial wastes.

Stream Pollution. The problem of stream pollution has been actively studied by the technical forces of the Commission, with the assistance of Dr. Henry B. Ward, Professor of Zoology at the University of Illinois. Dr. Ward was engaged during the entire college vacation period in making a preliminary investigation of the extent of pollution in the principal rivers of the State and of the effect of such pollution on the aquatic life in those streams. In addition to this work, the engineers of the Commission have made forty-eight inspections of particular instances of stream pollution by industrial wastes and domestic sewage. To form a basis for further work along this line, a card index list of the industrial plants producing waste matters injurious to fish or other aquatic life has been made up and the locations of these plants are being plotted on a large scale map of the State. Several hundred instances of stream pollution have also been reported by the game protectors and these reports are being systematically investigated as rapidly as possible with the limited force available for this work.

These studies and inspections indicate that the intensity of pollution in the larger streams is increasing at an alarming rate. This is due not only to the increasing number of new establishments, but to great increases in capacity of many of the older plants. The steadily increasing population has also caused a proportionate increase in the quantity of domestic

sewage to be disposed of, but this is largely being cared for by the construction of municipal sewage disposal plants by many of the larger cities and villages. The result of this steadily increasing pollution is to drive the fish from the streams, to seriously restrict the use of the streams for boating, bathing and other recreational purposes, and to render the waters unfit for manufacturing purposes. Another serious effect is the load placed upon the purification plants of those communities which must of necessity derive their domestic water supplies from the streams. While it is recognized that more or less pollution is unavoidable in any thickly populated community, and that no surface water should be used for potable purposes without adequate filtration or other form of purification, many of the industrial wastes interfere with the operation of filter plants and others cause disagreeable tastes and odors, which cannot be successfully removed by the ordinary methods of water purification. The only alternative is to prevent these wastes from reaching the streams.

Important corrective steps in the right direction have already been taken, as shown by the action of mill owners in reclaiming products that formerly went to waste in the streams. Much of this reclamation started before the war, but it is being considerably extended as a result of war time stringency and necessity for economy. A number of the larger corporations have chemists, who are specialists in a particular industry, working constantly on these problems, and several of them have already offered assistance to the Commission in the work that it is instituting.

Tannery wastes are being reclaimed for use in glue and fertilizer. Sulphite waste liquor from pulp mills, formerly discharged in large quantities, to the great detriment of life in the streams, is now handled at some places to yield alcohol, acetone and binder material. The binder material is used as a substitute for oil in road making and in the manufacture of coal briquettes out of coal dust, thus transforming an article worth one dollar a ton to one worth eight dollars. Of course we must not expect that everything can be made profitable. In any manufacturing enterprise, there will always be some waste. The problem, therefore, involves both the encouragement of reclamation, where possible, and the best disposal of such waste matter as cannot be profitably utilized.

The efforts of the Conservation Commission are to be directed toward helping this reclamation movement as much as possible, and endeavoring to have it put upon a permanent industrial basis after the war. In this way a double benefit to the public at large will result — the conservation of a valuable food product in the fish that are now destroyed, and the saving of millions of dollars in by-products that need not be wasted.

Realizing that real progress in the clearing up of stream pollution must be a matter of cooperation between the State and the industries, the Commission called a conference on pollution in Albany on September 5. It was attended by representatives of the State Department of Health, the U. S. Food Administration, biologists and fish culturists and representatives of industries and public organizations from all parts of the State.

The conference followed the preliminary survey, carried on throughout the summer, of the extent and evils of pollution in New York State, and a careful study of steps that must be taken to abate it, with due regard for the State's highly organized industrial fabric. This survey and study formed the basis of discussion at the conference, and brought about the complete agreement of those present.

The relation of pollution to the war and food supply was emphasized by Mr. W. S. Downs, Assistant to the Chief of the Division of Fisheries of the U. S. Food Administration, who stated that among all of the suggestions received by the Food Administration for the increase of food fishes over the entire country, and particularly in the states bordering on the Atlantic and Pacific seaboards, more than 60 per cent gave the elimination of pollution as the most important factor in the problem. Mr. Downs stated that the support of the Food Administration would be squarely behind the program of the Commission to clean up the State's water courses.

That pollution has been rapidly on the increase in New York State, and that the time has now come when the tide should be set definitely in the other direction was agreed by all present.

The program agreed upon by the conference requires few changes in the present law. Appropriations will be necessary, however, for the employment of an expert biologist and chemist,

for educational work among industries affected, and for general administration of laws already on the books. The program further provides for the establishment in the Conservation Commission of an effective clearing house regarding all pollution matters, and for developing cooperation among the industries concerned, so that reclamation and disposal processes worked out by industrial chemists and engineers may become generally known. It was the belief of the industries represented at the conference that a spirit of cooperation will be manifested by manufacturers, and that in the majority of cases it will not be necessary to apply the rigorous procedure now provided for the enforcement of the law.

The investigations thus far made indicate that the more gross forms of pollution, at least, can be eliminated without undue hardship to the industries responsible for their existence and without placing those industries at a disadvantage with similar industries in other states. Corrective methods, however, should not be undertaken without full consideration of all factors involved, both economic and physical.

In order to plan this work on a better basis, more definite information is urgently needed as to the effect of specific substances on fish and other aquatic life. This will involve rather extended laboratory experiments by qualified specialists in aquatic biology and fish pathology. It is believed that such experiments can best be made in cooperation with one of the established laboratories, such as the Biological Experiment Station of Cornell University.

The present Conservation Law provides that "No dyestuffs, coal tar, refuse from a gas house, cheese factory, creamery, condensery or canning factory, sawdust, shavings, tanbark, lime or other deleterious or poisonous substance shall be thrown or allowed to run into any waters, either private or public, in quantities injurious to fish life inhabiting the same, or injurious to the propagation of fish therein." The Commission has found that one of the practical difficulties standing in the way of effective action under the statute is that no adequate biological study of the effects of various kinds of pollution upon fish life has ever

been made. It has thus been possible to improve stream conditions only in cases of the most flagrant violations of the statute, where fish were visibly killed below the point of pollution. Between this extreme condition and that of purity of the waters are many gradations of pollution which may not immediately affect the fish but which are ultimately fatal to them. Some pollution may even be innocuous to the fish themselves, but may kill off the minute plant and animal life upon which the food supply of the fish depends, and thus transform a productive stream into a biological desert.

It is respectfully recommended:

(1) That sections 247, 325 and 326 of the Conservation Law be so amended as to give the Commission discretionary power to prohibit the discharge of injurious waste matters into streams until suitable treatment has been applied to them.

(2) That section 525 of the Conservation Law be so amended as to define and limit the jurisdiction of the Commission to the protection of public water supplies and the protection of fish, shellfish and other aquatic life in the waters of the State, without depending on the jurisdiction of other departments and commissions.

(3) That an appropriation of \$10,000 be provided for the expenses of such biological experiments as may be necessary and the employment of such engineers and other technical assistants as may be needed to properly handle the subject of stream pollution.

(4) That a law be passed to prohibit the dumping of garbage and other coarse refuse into public waters. The public enjoyment of many bathing beaches and water courses is now entirely destroyed by the unnecessary use of public waters as dumping grounds for all sorts of waste material from the land and from the boats that ply on the waters.

MISCELLANEOUS WORK

Storage Reservoirs on Black River Watershed. Section II of the Conservation Law conferred upon the Commission the powers and duties of the Commissioners of Water Power on the Black river. The activities referred to include the care and

supervision of the dams and regulating works owned by the State upon the Beaver river at Stillwater, upon the Moose river at the outlet of Fourth lake and at the foot of Sixth lake. These reservoirs are maintained and operated for the purpose of restoring to the Black river an amount of water equivalent to that diverted in connection with the State's canal system. The dam at Sixth lake is a timber crib structure, which has so deteriorated by the action of the elements as to become unsafe. An unusually large flood would probably cause the destruction of the dam and the consequent loss of the stored water, as well as considerable property damage. Temporary repairs were made in 1917, but the whole structure should be replaced by a permanent concrete dam. It is estimated that a new dam can be built for \$20,000.

Repair of Spillway Dam at Cuba Reservoir. At the request of The Division of Lands and Forests, this Division prepared estimates of cost for the repair of the spillway dam at Cuba lake on the Cuba reservation. The 1918 legislature provided \$7,000 for this purpose. On account of labor and material conditions and the cost of making investigations to determine the amount and exact character of the work which was necessary in order to let a contract, the Commission ordered that the repairs be undertaken under the supervision of the Division Engineer. At the close of the summer season, the water in the lake was drawn down and a trench excavated for the construction of a concrete cut-off wall above the dam. This excavation disclosed several large leaks which had admitted a large quantity of water through and around the dam and resulted in the breaking up of the concrete slab apron by frost action. The apron has been replaced and provision made to prevent a recurrence of the trouble.

Hydrographic Investigations. Pursuant to the provisions of section 21 of the Conservation Law, the Commission has continued the investigation of the water power resources of the State, including the systematic gaging of the flow of its principal streams. This work is performed in cooperation with the water resources branch of the United States Geological Survey and is paid for by an annual appropriation of \$10,000 by the State, together with such

funds as are contributed by the Federal Government for this purpose. In 1918 the Federal Government contributed \$4,000. About fifty stream gaging stations, so distributed as to cover all the principal rivers of the State, have been maintained during the past year. Dependable streamflow records covering long periods of time are the first requisite in studies for the development of water power, and it is highly important that this work be continued without interruption during the coming year.

DIVISION OF SARATOGA SPRINGS

POLICY OF ADMINISTRATION

The policy of the Conservation Commission in its conduct of the State Reservation at Saratoga Springs is to build permanently and for the future. New construction work that is undertaken is handled with the future in view.

The State of New York has, in the mineral springs at Saratoga, a natural resource that is without a superior anywhere in the known world, and one that can be made of inestimable benefit to all future generations. Nevertheless, the State Reservation upon which these springs are found is only now entering upon the period of its complete development. It is only recently that the springs have come back to their natural flow after years of depletion. Much time is required to develop fully the park system that must ultimately characterize Saratoga, and procure the erection of suitable buildings for the accommodation of visitors. The Conservation Commission realizes that this development must go on year by year, with something accomplished each year to place the Reservation still farther in the lead. Evidence of this policy of continuous improvement, with an eye to the future, will be found in the detailed reports that follow under the various headings.

GOOD CONDITION OF THE SPRINGS

The Commission is glad to report that the springs upon the State Reservation at Saratoga were never in better condition. All of them are flowing naturally, either as surface or underground

springs, according to their characteristics, and every one exhibits full mineralization and carbonation. In fact, some of the springs are stronger in mineralization than any previous records have indicated.

The work of the year in keeping a check upon the behavior of the springs has furnished additional confirmation of the fact that the springs of the Saratoga region, though differing widely in character, are intimately interconnected. Retarding the flow of one throws its surplus water over into another and changes the character of the second; whereas, an undue flow of one spring will be very quickly manifested in the depleted flow of another. It is thus apparent that it is impossible to maintain a proper flow and mineralization of the springs without a large fund of information regarding their behavior and the ways in which one reacts upon another. As far as it is possible to record such information, it is the policy of this Commission to record it and to have these records in existence for guidance in future years. Without such records, coupled with experience in the behavior of the springs, situations are bound to arise in which the flow of any individual spring may be lost, or its mineralization decreased, so that it may be extremely difficult, or even impossible, to return it to its former condition.

NET PROFIT ON THE YEAR'S BUSINESS

The income producing departments of the State Reservation have continued to pay a net profit upon the year's business, even under the tremendously difficult operating conditions that have prevailed, the total amount of profit for the fiscal year from June 1, 1917, to June 1, 1918, amounting to \$4,834.56, which is a profit of 6.3 per cent on the cost of operation.

This profit is made up from business of the Bath House Division and Miscellaneous Division, which offsets a small loss occurring in the Spring Water Division. The business of the Spring Water Division was practically at a standstill for four months in the winter of 1917-1918, on account of the extreme cold weather of that season, which made shipments almost impossible, and also because of the embargo placed by the federal government upon many shipments because of war conditions. In addition, the Spring Water Department, besides having its sales cut down

by reason of these causes, had to meet greatly increased operating expenses due to the high cost of materials.

The percentages of increase of many of the chief factors entering into the operation of these three departments are as follows:

	Per cent.
Increased cost of coal	53
Labor, rate of wages	25
Cases for bottles	83
Demijohns and crates	53
Corks	46
Piping and fittings (estimated).....	200
Chemicals (used in cleaning and sterilizing bottles and also in the bath houses).....	250
Bath house supplies, soap, lines, towels, etc.....	50

The amount of the business of these three departments for the fiscal year ending June 30, 1918, was \$81,544.62, which, in view of the very difficult conditions under which resorts of every kind operated during that year, is regarded by the Conservation Commission as thoroughly satisfactory, since the business of the preceding year, which in its turn was the best ever experienced at the State Reservation, amounted to \$77,817.14 in volume.

The summer of 1918 was reported everywhere to be an unusually poor season. Nevertheless, it is worthy of note that the number of bath house treatments at the Reservation during the year (up to December 16, 1918) amounted to 23,305, whereas in 1917 they were 21,959. Moreover, in 1917, 21,959 treatments were given at three bath houses, but in 1918 the High Rock bath house was discontinued because of its poor condition. This meant that the increased volume of business in 1918 was handled at two bath houses instead of three. Their facilities were taxed to the utmost and it became more and more apparent that more accommodation for this sort of business must be provided immediately if the Reservation is to care for the constantly increasing number of patients who come to it each summer for treatment.

NEW BATH HOUSE UNDER CONSTRUCTION

When it became apparent during the last summer that immediate steps must be taken to meet the volume of business that may

be expected in 1919, it was found possible for the Commission to arrange with the lessee of the Woodcraftsman Building, standing upon the State Reservation, just north of the Lincoln Bath House, to cancel his lease. This building was originally constructed as a gas plant.

The State Architect found, upon a study of the building, that it could be very advantageously remodeled into a bath house which will be superior in every respect to either of the bath houses on the State Reservation and will take its logical and permanent place in the continuous development of the Reservation. The work of remodeling this building has been put in hand, and it is expected that it will be ready to give treatments at the beginning of the 1919 season. It is being financed from the Capital Fund.

This new bath house, however, does not mean that the State should delay the erection of a suitable bath house that will be appropriate for the Empire State and comparable with buildings at the great Spas of Europe. Such a bath house and drink hall will be more than ever a necessity now that the war is over and the country settles again into its normal course. The Commission accordingly recommends that this subject be taken up by the legislature and that funds, at least for the start of the work during the coming year, be made available for that purpose.

BOTTLING PROBLEMS

A year ago, the Commission reported that bottling difficulties, which had made it impossible to bottle certain of the Saratoga waters in their natural condition, had been successfully overcome. The system then reported upon has been in operation now for a year longer, and has given every satisfaction, so that it is possible to state, with even greater assurance, that the Saratoga waters may always be bottled in their absolutely natural state, just as they flow from the springs, with nothing added to them and nothing taken away. The accomplishment of this end has entailed a large amount of experimental work, the benefits from which will be reaped in the years to come.

CAPITAL FUND

The Capital Fund of \$260,000 which has been provided by the legislature to meet the needs of conducting such a business as

that of the State Reservation has made it unnecessary to ask the legislature for many appropriations. The fund has been kept intact, and under the business management that should characterize the conduct of the Reservation from year to year, it should be possible to maintain this fund unimpaired continuously.

SUIT AGAINST THE RESERVATION

On March 6, 1916, which was just about one month prior to the turning of the State Reservation over to the Conservation Commission, a contract was entered into by the former Commissioners with the Saratoga State Waters Corporation for the bottling and sale of the Saratoga waters, during the maximum period of twenty-five years. Immediately upon learning of this contract, the Conservation Commission, upon the advice of the Attorney-General and the State Comptroller, rescinded it, prior to the date when it was to take effect and before the lessees had entered upon the privileges which the contract was intended to confer. The action of the Commission was based upon a careful study of the situation, which convinced it that the contract was contrary to public policy, unfair to the State and not within the legal authority of the Commissioners to execute.

The lessees thereupon brought suit for damages and for specific performance of the contract, against both the Conservation Commission and George D. Pratt as an individual. On motion of the Attorney-General, they were required to elect whether they would hold the Conservation Commission or the Commissioner individually, and they chose the latter. The case went to trial in the Supreme Court and in January, 1918, a decision was rendered in favor of the plaintiffs. The case was immediately appealed and on September 26, 1918, the Appellate Division reversed the decision of the trial court. The plaintiffs have now appealed from this decision to the Court of Appeals, and it is expected that a final decision will be rendered in the near future.

The uncertainty which this situation has created has made it impossible to proceed with plans for the marketing of the mineral waters on a large scale.

PARKS AND DRIVES

During the year 1917-1918 extensive improvements were made upon the roads and pathways throughout Geyser Park. The

bridges were all in a very dangerous condition, but had not been previously repaired owing to the fact that appropriations had not been made for the purpose. During the summer of 1918, however, all of the dilapidated wooden structures were removed and replaced by substantial reinforced concrete of suitable design to harmonize with the landscape. These structures consist of four road bridges 17 feet wide, two of which are 30 foot spans and two 12 foot spans; three footpath bridges 6 feet in width, one with a 24 foot span and two with 32 foot spans; and five seventeen foot road culverts with openings 5 ft. wide by 3 ft. high. Four old wooden drainage culverts were replaced with tile or iron pipe. The roads leading to these structures were widened, regraded and regraded. To supplement the work begun in 1917 around the Hathorn No. 2 and No. 3 springs, the filling and grading was continued to the north around Coesa Spring. A driveway similar to that at Hathorn No. 2 was provided, in order that the congestion of cars stopping along the State highway might be relieved.

The roadway just north of the Hathorn No. 3 spring, which is now the entrance to the southern end of Geyser Park, is somewhat dangerous to use, because of the fact that it crosses a four tracked railroad. It has been proposed for a part of the park development system to tunnel under this railroad and thereby make a suitable and safe approach to Geyser Park from the south.

The difficulty of securing labor for the mowing of lawns throughout the parks, which are very widely separated, was overcome, in a large measure, by the purchase of a gasoline-driven mower. This mower was transported from place to place by one of the Reservation trucks, and it was thus possible to cut all of the lawns in two days, with the services of but two men, one for operating the mower and the other for trimming around the shrubbery. The roadways through the pine promenade and around the bottling plants were all regraded and resurfaced.

The natural beauty of the scenery along the Coesa valley had long been destroyed by the presence of the unsightly abandoned trolley trestle that crossed the ravine. Inasmuch as the old trolley line had been abandoned for some time, the Commission prevailed upon the trolley company to remove this structure. Its removal has greatly improved this portion of the park.

BUILDINGS

During the spring of 1918, the addition to the Ferndell plant was completed. This addition provided a new boiler and pumping plant and storage capacity for several carloads of bottles, wrappers, boxes, etc. It also allowed the rearrangement of the bottling machine and the installation of a conveyor system, thus facilitating a large increase in the capacity of the plant. The interior of the plant has been entirely redecorated. The walls were finished in flat white, while the woodwork and bottling machinery were finished in white enamel.

While the present mineral water bottling building is very old and not entirely suitable for the purpose for which it is used, the interior of the bottling room has been made entirely sanitary by a rearrangement of the floor drainage system and the redecorating of the walls and ceiling with flat white paint.

Owing to the heavy snows of the past winter, the supports of the roof of the Hathorn Drink Hall gave way, leaving the building in a very dangerous condition and necessitating the construction of a new roof. Although the repairs were started late in the spring, the work was completed about the first of July.

The interior was finished in white, with green trimmings, and a number of large palms and ferns were installed to add to the attractiveness of the hall.

Two new drinking fountains, constructed of pink Tennessee marble, were placed in the drink hall, one furnishing the water from the Hathorn No. 1 spring and the other furnishing the water from the Patterson. Both of these fountains were surmounted with glass globes, through which a small stream of mineral water is kept flowing. The Patterson fountain has replaced the hexagonal metal drinking fountain that formerly occupied a large portion of the space in the center of the drink hall. This old fountain was constructed of the best electrolytic copper and high grade brass. The metals were sold at the prevailing government prices and the income practically paid for the installation of both the Hathorn No. 1 and Patterson fountains.

The drink hall is now heated throughout the winter months by a hot-air system. The air is drawn through a series of steam

coils and distributed by a blower to the hall and front offices. This is a vast improvement in itself, for, in previous years, it was necessary to partition off a large part of the drink hall and heat the rest with stoves. The materials used for the installation of this new system were nearly all secured from stock on hand.

Owing to the poor condition of the walks along the east side of the drink hall on Putnam street, a new cement walk was constructed which has vastly improved the approach to the free entrance. A new electric sign was placed over the main entrance on Spring street.

A part of the large Patterson drink hall on Phila street has been partitioned off and is now used for an automobile repair shop. This was made necessary on account of the additional trucks to be taken care of and repaired. All repairing is now done in this shop by employees and thus the maintenance of the trucks is considerably reduced.

The building formerly known as the Natural Carbonic Gas Company building, and more recently rented to the Woodcraftmen as a furniture factory, is now being torn down and remodeled into a bath house. All the lumber and other materials taken from this building will be used as far as possible in the new building. The old High Rock bath house, that was closed during this past summer, because of its poor condition, has been torn down and the lumber used for new construction. The grounds will serve as a park, in the center of which the popular Peerless spring will be available for the public.

The great increase in the number of patients requiring mineral water baths caused great congestion in both bath houses this summer and required the utmost co-operation between physician, attendant and patient in order that proper treatment could be given under such conditions.

In order that the ever increasing number of patients may be properly taken care of, and that each individual may receive the attention and accommodation due him, it is necessary, if possible, to have the new bath house that is being remodeled from the Woodcraftsman building completed by next summer.

Owing to the fact that the country was engaged in the world war, and that all labor and material essential to the successful

conclusion of the war had to be conserved and diverted into government channels, it was necessary to undertake this construction by our own forces and by such men as were not required by the government. Under these conditions, work could not be contracted for and all material, labor, etc., had to be procured through this office. However, with the co-operation of the State Architect, the work is well under way and it is hoped that it will be completed for the summer of 1919.

WELLS AND SPRINGS

The various wells and springs of the Reservation have received constant attention during the past year. Complete analyses have been made of each spring in use and never before has better water been furnished from these fountains.

In the early spring the tubing was removed from the Congress well and a new set of double rubber packer seals were placed in such a way as to take the water from the strongest mineral water vein and exclude all fresh water. The spring gave no trouble throughout the summer and furnished a chalybeate water that cannot be surpassed. Its water was perhaps one of the most popular from the medicinal standpoint of any of the wells.

The great demand for the water of the Patterson spring led to the piping of this popular water to the new fountain in the drink hall. Inasmuch as this well was not owned by the State of New York until the year 1916, very little attention had been given to the seals and tubing. From time to time, however, chemical and bacteriological tests were made in order to insure the purity of the water. In the spring of 1918 the tubing was removed from the well and found to be very badly perforated from the action of the water. Ninety-six feet of old one-inch pipe, with an old expansion seal, were also removed. This piping and seal had been lost some years ago and were simply left in the well to be dissolved away by the action of the mineral water.

The four-inch outer casing was carried up 5 feet to the level of the ground and the useless pit that surrounded the well was filled in and cemented over. The well was then retubed in the same manner as the Congress spring and a pure, sparkling and much improved water was obtained.

After several unsuccessful attempts had been made to bottle the water from the Polaris spring, it was found that the outer casing was leaking badly, thus allowing the spring to flood with fresh water. The pump was removed from the well and an eight-inch casing was driven over the present six-inch casing to the rock. In this manner all fresh water was sealed from the well. The tubing was then replaced, and from present indications a very satisfactory water will be obtained.

During the early summer of 1918 it was found that for some reason the two wells, Congress No. 2 and Hays, supplying gas for the gas plant, were not producing sufficient gas to comply with the contract drawn up by the previous Commission. Upon investigation it was found that the water from the Congress No. 2 spring had decreased considerably in mineral, as well as gas, content. After extensive experimentation, it was discovered that there was not enough water flowing from the springs of the Champion valley, thus permitting the ground water level to rise so high as to practically drown out the mineral water of the Congress No. 2 spring. After opening the Champion No. 2 spring and allowing the water to run from it as fast as a one-inch pipe could carry it away, the water of the Congress spring assumed normal conditions. In order to facilitate the storage of gas during the winter months and to avoid difficulty in keeping the water in the gasometer from freezing, a new concrete reservoir was constructed on the hillside to the north. This reservoir furnishes a copious supply of fresh water that will be sufficient to maintain a good circulation in the gasometer and prevent freezing. The two lower sheets of the gasometer had to be replaced to prevent loss of gas. The best grade of Armco iron was used for this purpose.

It was necessary, during the past season, to seal off the water from the Minnonebe spring, because of its intimate connection with the Geyser. The flow from the Geyser spring was gradually decreasing, while the Minnonebe showed a steady increase in flow until nearly all of the water from the former was being diverted to the latter. Inasmuch as the Geyser has always been the better spring of the two, it was considered advisable to cap the Minnonebe in order to maintain the former.

Provision has been made at the Hathorn No. 2 spring for a free drinking service. A slight extension was made to the roof of the pump house so as to form a small porch, under which the water is drawn.

New Tennessee marble fountains were installed both at the Hathorn No. 3 and Coesa springs. Here the waters were served and drinking cups provided by the girl in charge. These three springs, along with the extensive improvements to the surrounding grounds, make a very suitable approach to Geyser park.

In order to relieve the congestion around the free entrance to the Hathorn No. 1 spring, a plan is now under way to pipe some of the water to a small pavilion to be built on the plot of ground owned by the State directly opposite to the drink hall on Putnam street. This will enable the people to get this water out of doors and enjoy a short walk in the park while sipping their water. It will also relieve the congestion and aid in the dispensation of the water of this popular spring.

For the past two years the bath waters used at the Saratoga and Lincoln bath houses have been furnished by the wells of the Lincoln tract. During the summer season the amount of water furnished from these wells has run an average of about 1,800 gallons per day. This amount will have to be increased about one-third in order to supply the new bath house now under construction. Two of the best water and gas producing wells on the Natural Carbonic tract, which adjoins the Lincoln on the north, have been selected for the extra supply. With the total of five wells, it will be possible to furnish the 24,000 gallons needed daily, or, during the busiest hours of the morning, 100 baths of 60 gallons each per hour. The draft of this quantity of water will not in any way deplete the water supply or affect the springs in the village.

When it is taken into consideration that for a period covering from fifteen to twenty years there was over ten times this volume of water removed from the ground daily, before the mineral water levels were seriously affected, it is apparent that we are working within a large margin of safety.

BOTTLING PLANTS

The mineral water plant is now, as far as equipment is concerned, as thoroughly modern as it can be. The addition of a new Twentieth Century washing machine has completed the process, so that everything is handled automatically, from the time the bottle enters the soaking machine until it is labeled and placed in the case for shipment.

The installation of the washing machine unit has eliminated the sorting out of bottles containing rings of mineral salt, that were formerly cleaned by use of acid in a separate process. It has not only solved a difficult problem, but has reduced the cost of labor in handling bottles. On account of the large quantity of water used by this machine, it was necessary before its installation to develop a water supply large enough to meet its demand. Accordingly, a large filtration gallery was sunk in the ground, which intercepts the pure ground water before it enters Geyser lake. This pure water supply will furnish about forty gallons of water per minute.

The bottling of the mineral water in quart sizes has always been expensive, because of the large amount of breakage of bottles and machinery. It has been found that when the machinery has been adjusted for pints and then readjusted to bottle quarts, the result has always spelled disaster. Because of this, an additional tank and a hand filling machine has been installed to bottle quart sizes to take care of the present needs. This eliminates all undesirable results and gives sufficient capacity to meet the demand for quarts.

There have been plans prepared for a new mineral water bottling plant to be erected on the land adjoining the present warehouse. It is planned to use the present machinery for the bottling of quart sizes, while an entirely new unit will be installed for pints.

THE FERNDELL PLANT

Since the new addition to the Ferndell plant has been completed, the machinery has been rearranged and conveyor systems installed. These changes greatly facilitate the handling of this water and increase its daily output considerably. The maximum output is two carloads of 5 gallon demijohns per day, or about 7,000 gallons of water.

This water is now being bottled under the new system. Three six inch bores were sunk to the clay and the water intercepted at a depth between 30 and 40 feet. Strainers covered with screening of 100 meshes to the inch were then inserted and the wells tubed. The six inch casing was then withdrawn and the hole was packed with washed gravel to retain fine sand and silt. The water is pumped from the wells to a pressure tank, which in turn is piped to the fillers. In this way there is no exposure to light or air and the water is placed in the bottle in the same condition as it comes from the ground. This has eliminated the trouble caused by growth of algae, which was encountered when the old system was in use. The filling and storage system is connected directly to the steam boiler, so that live steam can be passed through all tanks and pipe lines before filling is begun. This assures clean and sterile conditions at all times.

This plant has been furnishing about 3 carloads per week to the Watervliet Arsenal and a large quantity to the State Departments in Albany and the local vicinity. During the epidemic of influenza, water was furnished free of charge to the Village of Victory Mills, and to the Saratoga Hospital and Fire Department.

BATH HOUSES

Both the Saratoga and Lincoln baths have had a very successful season. Although the Saratoga baths were somewhat overcrowded and the facilities for resting were somewhat inadequate, the closer cooperation between physician and attendants reduced to a minimum the confusion caused by overcrowding. The Saratoga bath house has been entirely renovated and presented a clean and sanitary aspect.

At the Lincoln bath, the only trouble experienced during the summer was the overcrowded condition, although not as bad as at the Saratoga house.

A refiltration system was operated on the fresh water pools during the summer with great success. The pools were kept safe and sanitary all summer with a minimum of expense.

The past season has proven beyond a doubt that the most urgent need of the State at Saratoga is adequate bathing facilities, with plenty of rest rooms, so as to avoid congestion and the excitement caused by it. The new bath house will provide for this temporarily.



Hathorn No. 3 Spring in its new pavilion is a center for automobilists.

**Congress Spring is flowing with all of its old mineralization, making
it the most popular on the Reservation.**

SUMMARY OF LEGISLATIVE RECOMMENDATIONS

A summary follows of the more important recommendations requiring legislative action. Certain of these recommendations are not discussed in the body of this report, because they were fully covered in the report of a year ago, but have not yet been enacted into law. Other minor recommendations are suggested in the body of the report, or will be made to the legislature at proper times.

DIVISION OF FISH AND GAME

The deer season should be shortened by cutting off the first two weeks in October, when the leaves are still on the trees, in order to minimize the accidental shooting of does and to increase the safety of hunters. The number of deer allowed to each hunter should be reduced to one buck only.

It is recommended that the hunting license fee be increased to \$1.25, in order that town and county clerks may be better compensated for their work in issuing these licenses.

It is recommended that a law be passed making it illegal to possess the plumage of protected birds.

A law to provide for the registration of guides is suggested.

Provision should be made for the establishment of a number of field stations for the taking of fish eggs and the hatching, rearing and distribution of certain species.

Provision should be made for the establishment of a marine fish hatchery for the propagation of those food fishes of the sea that will respond to artificial propagation, in order that their numbers may be increased in New York State waters.

Jurisdiction of the Conservation Commission should be extended to all of the State's tidal waters, and laws should be passed placing size limits and closed seasons on certain fish and giving the Commission regulatory power over nets.

Hatchery employees should be placed upon a monthly salary basis, instead of the present per diem basis, and provision should be made for promotion and increased salary as a result of efficiency in fish cultural work.

The closed season on black bass should be extended to July first, in order to more nearly cover their entire spawning season, except in boundary waters.

Legislation should be enacted making fish planting in both public and private waters subject to regulation and control by the Commission.

The Commission should be empowered to sell fish at cost for stocking private waters and to furnish without charge sufficient fish for the initial stocking of farm fish ponds.

An amendment should be made to section 182, subdivision 5, of the Private Posting Law, so that the owners of fishing rights shall not be entitled to exemplary damages unless they annually stock the portions of streams posted by them.

DIVISION OF LANDS AND FORESTS

Provision for steel towers on a number of additional mountain stations should be made, in the interest of more effective fire protection, under the policy of erecting a few of these towers each year. The equipment of all of the mountain stations that require such structures is rapidly nearing completion.

The growing of timber should be encouraged by a law exempting it from taxation until it has reached a proper age for cutting.

Provision should be made for continuing the work of protecting the shore line of Lake George islands by an appropriation of \$10,000, which will complete the work that is of pressing necessity.

Provision should be made for energetically continuing the campaign against white pine blister rust upon an increased scale, now that the war is over, in order to check the headway that the disease is gaining in New York State.

It is requested that forest rangers be paid a salary of not less than \$100.00 a month, with provision for increase for efficiency.

DIVISION OF WATERS

The State's policy regarding stream control and the development of water power should be crystalized by appropriate legislation and further legislation should be enacted to make the power policy effective.

The law regarding the pollution of streams should be amended

- (a) to give the Commission discretionary power to prohibit the discharge of injurious waste matters into streams until suitable treatment has been applied to them;
- (b) to define and limit the jurisdiction of the Commission over the protection of public water supplies and the protection of fish, shellfish and other aquatic life in the waters of the State, without depending upon the jurisdiction of other departments and Commissions;
- (c) to prohibit the dumping of garbage and other coarse refuse into public waters.

An appropriation of \$10,000 is requested for the making of biological experiments regarding the effects of pollution upon fish life, and the employment of engineers and other technical assistants to properly handle the subject of stream pollution.

DIVISION OF SARATOGA SPRINGS

An appropriation is requested with which to at least begin the construction of a suitable bath house and drink hall upon the State Reservation at Saratoga Springs.

CONSERVATION BUREAU, ATTORNEY-GENERAL'S OFFICE

There are about forty actions pending involving title to lands in Township 40, Hamilton County, on Raquette Lake, but trial is postponed until decisions are received in various actions on appeal.

During the year 1903 about twenty-five actions in ejectment against occupants of Township 40 were heard by Hon. Arthur L. Andrews as Official Referee at Raquette Lake and decided in favor of the State. Judgments were entered in Hamilton County Clerk's office; but the defendants in nearly all instances still occupy the premises. One of these actions was against Joseph H. Ladew

and involved title to Osprey Island. Mr. Ladew appealed from the judgment entered upon the Referee's decision. The Appellate Division affirmed the judgment. The Court of Appeals reversed the Appellate Division and granted a new trial. Action was commenced in 1914 against Jennie H. Ladew and Joseph H. Ladew. Various hearings were had before Justice Charles C. Van Kirk and in 1918 a decision was handed down in favor of the People. Thereafter, Jerome, Rand & Kresel of New York City were substituted as attorneys for defendants in place of Charles E. Snyder of Herkimer. In June 1918 the defendants appeared by their attorneys before Judge Van Kirk and made application for a stay pending appeal. This motion was granted upon the condition that the defendants give an undertaking to the People conditioned to pay \$1,000 per year for the use and occupation of the premises described in the complaint pending the appeal. The case on appeal has not been served as yet.

In another action against H. Robert Beguelin, a notice of motion was made in 1917 by the defendant's attorneys, Messrs. Snyder, Christman & Earl, for leave to serve a supplemental and amended answer. Judge Van Kirk denied the motion with costs. Upon a reargument in February, 1918, the motion was again denied. The Appellate Division affirmed the order; and Judge Cochrane in his opinion holds that the alleged title which the defendant claims to have acquired from the University of Vermont and others cannot successfully be interposed; and that the defendant is estopped from asserting any title to the premises as against the plaintiff by an instrument executed by the defendant in 1909 wherein the defendant certified that his occupancy of the premises was at the sufferance of the People and not adverse or hostile to the claim of title of the State, and also by a letter accompanying this instrument in which the defendant stated that in case the State should desire the premises vacated at any time, "he should have the right to remove his buildings if possible."

In the action against William Payne and Martha Payne, which was commenced in 1901 to recover possession of lands in Township 40 on the westerly side of Raquette Lake, and was heard by

Mr. Andrews as Referee in 1903, a motion was made to vacate the judgment and grant a new trial. This motion was denied. An appeal was taken from the order denying motion and the order was affirmed. A motion made for a re-argument by the defendants was denied by the Appellate Division in January, 1918. In February, 1918, a motion was argued for leave to issue execution. This has not been finally decided by the Court.

Various motions have been made in these matters. A motion to vacate the judgment recovered against Jerome Wood and Anna Wood was granted, while a motion to vacate the judgment in *People v. Thomas Bennett* was denied. An appeal was taken in the Wood case and in November, 1918, a decision was handed down affirming the order. A motion is pending for leave to issue execution in *People v. Richard Bennett*. In *People v. George H. Carlin*, motion for leave to issue execution was granted by Justice Whitmyer in June, 1918, and a re-argument is now pending.

In the matter of the appropriation of lands in Herkimer County in 1909, the Claimant, Taggarts Paper Company, has recovered judgment in the sum of \$203,384.95, entered in the office of the Court of Claims on July 9, 1918, and a supplemental judgment was entered November 19, 1918, for \$9,558 and interest from January 1, 1917. The claim as filed was for damages in the sum of \$475,880. An appeal to the Appellate Division from the judgment, in so far as the judgment fails to allow claimant to recover interest or damages in the nature of interest upon the award for the appropriation of lands from January, 1909, to January, 1917, is pending.

In the action brought by the Saratoga State Waters Corporation against George D. Pratt in 1916, a decision was rendered by Mr. Justice Henry V. Borst in January, 1918, permanently restraining the defendant from interfering with the plaintiff corporation and its authorized representatives, in taking possession of the State's property and entering upon the performance of the contract set out in the complaint, which the defendant had refused to recognize as valid. An appeal was thereafter taken to the Appellate Division. The appeal was argued on the 1st day of July, 1918, and later an order was made and entered by that court reversing the judgment of the trial court and

granting a new trial. Thereafter the plaintiff moved for leave to appeal to the Court of Appeals on questions to be certified by the Appellate Division. This motion was opposed by counsel for the defendant, and the motion was denied. Thereafter, and on the 5th day of December, 1918, the corporation took an appeal to the Court of Appeals and stipulated for judgment absolute against the plaintiff in case the order of the Appellate Division should be affirmed.

An action was commenced against the Delaware and Hudson Company in June, 1918. The complaint alleged the failure of the railroad company to maintain a sufficient number of fire patrolmen upon the right of way through the forest land in Essex county. This action was settled for \$350.

Appeals to the Appellate Division have been withdrawn in the following title actions: People v. Raquette Falls Land Company (Essex county), where the defendant satisfied the judgment of \$1,729.65 early in 1918; People v. Stella Phelps Bell and Others, and People v. Heman E. Baker.

An appeal is pending in an appropriation case entitled Mary L. Fisher against The State.

In the matter of the claim of the Herkimer Lumber Company against the State of New York, after the proof had been submitted and briefs filed, a motion was made by the claimant to amend the claim. This motion was heard by Hon. Fred M. Ackerson, presiding judge of the Court of Claims, on June 8, and on November 27, 1918, a copy of order amending the claim was received by the Attorney-General.

From the orders received by the Attorney-General upon resolution of the Conservation Commission to commence action, the following have been disposed of during the year 1918: Sixty involving fish and game violations and 27 involving matters pertaining to the forestry division. There are 140 forestry matters pending, including actions against occupants of Township 40, and 10 orders involving fish and game violations pending settlement or trial.

FINANCIAL STATEMENT

SUMMARY OF RECEIPTS AND DISBURSEMENTS, EX- CLUSIVE OF REGULAR ACCOUNTS WITH THE STATE COMPTROLLER, FOR FISCAL YEAR ENDING JUNE 30, 1918

Receipts

(Exclusive of Receipts from Division of Saratoga Springs)

Fines and penalties	\$55,594 77
Net license	22,193 70
Breeders' license	1,080 00
Hunting and angling licenses	218,534 36
Magazine	115 13
Dog license	1,061 00
Tax and rentals shellfish lands	25,176 45
Foreign game tags	956 20
Tagging Trout	2,396 50
Importation and possession license	976 00
Cuba Reservoir rentals	2,432 39
Trespass on State Lands	3,640 39
Sale of Trees	3,198 06
Fire rebate	2,818 17
Top Lopping	512 70
Telephone rentals	72 00
Refund on payrolls	29 80
Fire fine	746 77
Miscellaneous	2,852 26
Saratoga receipts for June, 1917 (before the beginning of operation under the Capital Fund)	5,285 10
TOTAL	\$349,621 75

Disbursements

(Exclusive of Division of Saratoga Springs and Canaseraga Creek Improvement Fund)

Administrative

Salaries, regular	\$48,598 58
Wages, regular	1,260 00
Salaries, temporary	1,751 60
Fuel, light, heat and power.....	81 27
Printing and advertising.....	9,379 16
Equipment	4,093 26
Supplies	4,169 75
Traveling expenses	6,870 84
Communication	6,445 37
General plant service.....	275 97
Repairs	324 39
	<hr/>
	\$83,250 19

Division of Fish and Game

Fish culture

Salaries, regular	\$21,265	00
Wages, temporary	34,462	45
Maintenance and operation of hatcheries	36,309	88
Dunkirk hatchery — construc- tion	9,929	36
equipment..	1,955	00
Scriba Creek, dredging, etc....	144	23
Bemus Point hatchery:		
Purchase of land.....	2,500	00
Purchase of house and lot...	3,200	00
Repairs	551	31
Fish propagation in canals:		
Services	3,337	35
Materials and expenses.....	2,719	36
		\$116,373 94

Marine Fisheries Bureau

Salaries, regular	\$9,333 20	
Maintenance, operation, survey- ing, etc.	5,252 36	
	<hr/>	14,585 56

Game farms

Salaries, regular	\$8,166 93	
Wages, regular	3,056 67	
Wages, temporary	1,191 88	
Maintenance and operation....	19,794 00	
	<hr/>	32,209 48

License bureau

Salaries, regular	\$2,960 00	
Tags and tagging machines....	606 70	
Supplies, hunters' buttons, etc.	4,038 54	
Hunters' licenses and forms...	3,919 98	
	<hr/>	11,525 22

Game protection

Salaries, regular	\$158,543 40	
Wages, regular	720 00	
Wages, temporary	7,745 03	
Protectors' expenses, traveling, supplies, etc.	89,754 83	
Expenses of prosecutions.....	9,355 77	
Expenses of steamboats and launches	10,985 67	
Printing	1,051 50	
Merrill & LaFarge, refund.....	404 80	
		\$278,561 00

\$453,255 20

Division of Lands and Forests

Salaries, regular	\$37,776 40	
<i>Reforestation</i>		
Wages, temporary	\$35,022 99	
Expenses, traveling, supplies, etc.	11,563 75	
Printing	789 94	
		47,376 68
<i>Fire fighting</i>		
Salaries, regular	\$2,880 00	
Salaries, rangers and observers.	59,815 07	
Wages, temporary	5,657 55	
Expenses—traveling, erection of observation towers, sup- plies, etc.	31,252 18	
		99,604 80
<i>Surveying and Protecting State's title</i>		
Wages, temporary	\$2,686 15	
Expenses of prosecutions.....	413 37	
Traveling, etc.	5,120 05	
		8,219 57
St. Lawrence reservation—Highways and repairs		180 00
Lake George and Cedar Point—docks, shor- ings and improvements.....		13,015 73
White pine blister rust disease—services and expenses of agents and employees and pay- ment of indemnities.....		36,522 52
State forest preserve fund—expenses and pur- chase of land.....		46,263 38
		288,949 08

Division of Waters

Salaries, regular	\$20,691 26	
Wages, regular	500 00	
Wages, temporary surveys....	5,909 10	
Expenses, traveling, etc.....	5,685 49	
		\$32,785 85
<i>Bureau of docks and dams</i>		
Salaries, regular	\$3,500 00	
Wages, temporary	1,077 50	
Expenses—traveling, etc.	2,556 34	
		7,133 84

Hydrographic investigations

Salaries, temporary	\$6,253 49	
Expenses	2,437 73	
		\$8,691 22
River regulation by storage reservoirs—ser- vices and expenses.....		1,637 30
		<u>\$50,248 21</u>
Total expenditures, exclusive of Division of Saratoga Springs and Canaseraga Creek Improvement Funds....		<u><u>\$875,702 68</u></u>

CANASERAGA CREEK IMPROVEMENT FUND**Receipts**

By balance National Commercial Bank

Albany, N. Y., July 1, 1917..... \$5,657 56

1917

Jan. 3. Sale of certificate No. 8 21,000 00

Sept. 30. Interest on deposits.... 103 72

Nov. 27. Livingston Co. tax levy. 25,009 88

Dec. 31. Interest on deposits.... 139 23

1918

March 30. Interest on deposits.... 55 99

June 20. Sale of certificate No. 10 11,068 75

June 30. Interest on deposits.... 42 30

\$63,077 43**Expenditures**

1917

July 3. Interest on bonds..... \$4,750 00

July 3. Interest on certificates.. 1,293 75

July 3. Redemption of bond No.

3 5,000 00

Dec. 20. Redemption of certificate

No. 8 21,000 00

Dec. 20. Interest on certificate

No. 8 to Dec. 20.... 497 67

Dec. 20. Interest on certificate

No. 3 150 00

Dec. 20. Interest on certificates

Nos. 1, 2, 5, and 7... 1,293 75

Dec. 20. Interest on bonds..... 4,625 00

June 20.	Redemption of bond No.		
	4	\$5,000	00
June 20.	Interest on bonds.....	4,625	00
June 20.	Interest on certificates		
	Nos. 1, 2, 5 and 7...	1,293	75
June 20.	Interest on certificate		
	No. 3	150	00
July 1/17 to			
July 1/18.	Paid for services and expenses of construction and maintenance.	9,133	19
		<hr/>	\$58,812 11
Cash balance, National Commercial Bank, Albany, N. Y., June 30, 1918.....			\$4,265 32

FINANCIAL STATEMENT FOR DIVISION OF SARATOGA SPRINGS

INCOME-PRODUCING DEPARTMENTS

Cost of Operation

Water Division

Personal services	\$14,891	85
Fuel, light, power and water.....	3,387	50
Supplies	27,469	03
Repairs	3,646	84
Commission, allowances	3,457	73
Advertising	558	69
Communication, travel	719	89
Depreciation	600	35
	<hr/>	\$54,731 88

Bath House Division

Personal services	\$10,086	48
Fuel, etc	3,835	99
Supplies	2,895	01
Repairs	1,549	86
Depreciation	326	10
	<hr/>	18,693 44

Miscellaneous Division

Gas Plant

Repairs	\$230 71
Depreciation	400 00

Free Service

Personal service.....	887 51
Supplies	925 60

Patterson Building

Repairs	549 19
---------------	--------

Other Buildings

Repairs	291 73
---------------	--------

 \$3,284 74

 COST OF OPERATION \$76,710 06

Income Accounts

Sales of spring water	\$23,410 71
Drink hall admissions	6,667 85
Increase bottled water on hand ...	1,156 71
Sales of Ferndell water.....	19,554 53

 \$50,789 80

Bath house receipts 20,805 61

Gas sales \$2,347 40

Cup sales 2,499 40

Rentals 1,911 50

Miscellaneous receipts 2,008 56

Interest 1,182 35

 9,949 21

 INCOME ACCOUNTS \$81,544 62

Cost of operation \$76,710 06

 Income accounts 81,544 62

Net profit, income producing departments.. \$4,834 56

DISBURSEMENTS

Saratoga Departments Not Producing Income

Administrative

Personal service	\$12,902 31	
Printing and advertising.....	8,295 27	
Travel	443 98	
Communication	550 98	
	<hr/>	\$22,192 54

General Maintenance

Fuel, light, etc.....	\$291 87	
General supplies	2,131 13	
General repairs	403 51	
Parks and roads expense.....	6,786 10	
Well crew expense.....	3,400 86	
Maintenance of teams.....	713 09	
Depreciation (equipment).....	419 50	
	<hr/>	14,146 06
		<hr/>
		\$36,338 60

Extra

Albany salary	\$1,200 00	
Extraordinary repairs	5,859 66	
Experimental work	1,520 40	
Old accounts paid.....	1,000 00	
	<hr/>	\$9,580 06
		<hr/>
		\$9,580 06

Structures

Additions and betterments.....	\$12,674 35
--------------------------------	-------------

Administrative	\$22,192 54
Maintenance	14,146 06
Extraordinary	9,580 06
Structures	12,674 35

Total cost of operation of
departments not productive
of income \$58,593 01

DIVISION OF FISH AND GAME
SUPPLEMENTARY STATISTICS

1918

[187]

STATE OF NEW YORK

CONSERVATION COMMISSION

DIVISION OF FISH AND GAME

LLEWELLYN LEGGE *Chief Protector*
JOHN T. MCCORMICK *Deputy Chief Protector*
JOHN W. TITCOMB..... *Fish Culturist*
MANNISTER C. WORTS..... *Superintendent of Inland Fisheries*
EMMETT B. HAWKINS... *Supervisor, Bureau of Marine Fisheries*

EIGHTH ANNUAL REPORT
OF THE
CONSERVATION COMMISSION
1918

STATISTICAL REPORT
OF THE
DIVISION OF FISH AND GAME

HON. GEORGE D. PRATT, *Conservation Commissioner*:

SIR,—Herewith, in accordance with law, I transmit to you the statistical report of the Division of Fish and Game, for the fiscal year ending June 30, 1918. This statistical report is supplementary to the data supplied you for inclusion in the brief report to the Legislature.

Respectfully yours,

LLEWELLYN LEGGE,

Chief Protector.

JANUARY 15, 1919.

HUNTING AND TRAPPING LICENSES

TOTAL NUMBER SOLD FROM JULY 1, 1917, TO JUNE 30, 1918

	Res.	Non-res.	Total
Albany	3,889	400	4,239
Allegany	2,555	60	2,615
Broome	3,775	210	3,985
Bronx	878	10	328
Cattaraugus	3,726	500	4,286
Cayuga	3,558	370	3,928
Chautauqua	4,463	220	4,683
Chemung	2,725	70	2,795
Chenango	2,733	100	2,833
Clinton	2,424	150	2,584
Columbia	2,885	290	3,175
Cortland	1,746	140	1,886
Delaware	2,656	60	2,716
Dutchess	4,041	370	4,411
Erie	9,213	290	9,503
Essex	4,169	430	4,599
Franklin	4,533	710	5,243
Fulton	2,842	150	2,992
Genesee	2,002	260	2,262
Greene	2,412	80	2,492
Hamilton	1,496	460	1,956
Herkimer	4,117	540	4,657
Jefferson	5,747	690	6,437
Kings	2,064	180	2,244
Lewis	2,570	280	2,850
Livingston	2,814	170	2,984
Madison	2,516	140	2,656
Monroe	7,651	290	7,941
Montgomery	2,191	180	2,371
Nassau	2,952	140	3,092
New York	4,169	2,140	6,309
Niagara	3,445	120	3,565
Oneida	6,888	1,450	8,338
Onondaga	8,828	950	9,778
Ontario	3,240	50	3,290
Orange	6,175	350	6,525
Orleans	1,721	40	1,761
Oswego	3,596	200	3,796
Otsego	3,213	90	3,303
Putnam	761	170	931
Queens	1,427	60	1,487
Rensselaer	3,178	180	3,358
Richmond	555	40	595
Rockland	1,995	300	2,295
St. Lawrence	6,439	1,000	7,439
Saratoga	3,737	200	3,937
Schenectady	2,686	360	3,046
Schoharie	1,536	10	1,546
Schuyler	1,028	140	1,168
Seneca	1,347	100	1,447
Steuben	5,675	170	5,845
Suffolk	6,246	720	6,966
Sullivan	2,713	180	2,893
Tioga	1,313	50	1,363
Tompkins	2,191	50	2,241
Ulster	4,217	190	4,407
Warren	2,856	180	3,036
Washington	2,418	160	2,578
Wayne	3,107	50	3,157
Westchester	4,124	350	4,474
Wyoming	1,962	.....	1,962
Yates	1,380	.....	1,380
Total	204,944	17,990	222,934

GAME PROTECTION

ACTIONS BROUGHT, PENALTIES AND JUDGMENTS RECOVERED

Summary by Divisions — July 1, 1917, to June 30, 1918

Division	Actions	Recovery
Central New York (W. H. Weston, inspector).....	540	\$11,297 05
Metropolitan and Long Island (C. Hanlon, inspector).....	526	8,401 86
Western (F. W. Hamilton, inspector).....	368	7,232 35
Ontario (J. A. Colloton, inspector).....	254	4,691 95
Hudson (J. M. DeSilva, inspector).....	299	3,757 81
Eastern (C. A. Johnston, inspector).....	261	3,579 00
Eastern Adirondack (R. B. Nichols, inspector).....	200	3,458 20
Southern Adirondack (C. E. Underhill, inspector).....	160	3,155 25
Northern Adirondack (B. A. Cameron, inspector).....	154	2,870 95
Allegany (C. R. Stapley, inspector).....	189	3,132 00
Southern (S. B. Slatter, inspector).....	174	2,361 00
St. Lawrence (F. C. Mullin, inspector).....	121	2,054 90
Total.....	3,246	*\$55,992 32

NUMBER OF CASES REPORTED AND DISPOSITION OF THE ACTIONS

	Fined or settled	Licenses forfeited	Sentences suspended	Jail	Investigations, acquitted and cancelled
June.....	246	6	13	1	.....
May.....	254	5	14	.....	8
April.....	174	9	14	2	9
March.....	127	11	7	1	8
February.....	133	3	4	1	11
January.....	242	16	13	2	8
December.....	203	29	4	.....	7
November.....	346	127	17	.....	11
October.....	254	139	18	2	.....
September.....	247	53	16	.....	.....
August.....	202	31	9	1	.....
July.....	191	10	10	2	.....
Total.....	2,619	439	139	12	62

Fined or settled.....	2,619
Licenses forfeited.....	439
Sentences suspended.....	139
Jail.....	12
Investigations, acquitted and cancelled.....	62
Total.....	3,271
Investigations, acquitted and cancelled.....	62
Successful.....	3,209

* This total will not agree with the amounts deposited with the State Treasurer because many items are in the hands of the Comptroller of the city of New York or justices, and, further because this total includes the costs imposed by the trial courts.

GAME PROTECTION

*VIOLATIONS SUBDIVIDED BY CAUSES, JULY 1917 — JUNE 1918

BIRDS	Cases reported	Recovery
Aigrettes.....	31	
Pheasants.....	88	
Song.....	121	
Others.....	210	
	<hr/>	450 \$11,800 05
FISH		
Bass.....	111	
Trout.....	134	
Others.....	211	
	<hr/>	456 7,215 95
LICENSES		
Hunting.....	1,022	
Angling.....	69	
	<hr/>	1,091 10,108 95
QUADRUPEDS		
Deer.....	215	
Fur-bearing.....	244	
Squirrels.....	9	
Others.....	147	
	<hr/>	615 14,318 21
SHELLFISH		
Lobsters.....	62	
Oysters.....	34	
Scallops.....	10	
	<hr/>	106 1,419 85
ILLEGAL DEVICES		
Dogs.....	66	
Explosives.....	19	
Nets.....	272	
Set lines.....	100	
Spearing.....	43	
Tip-ups.....	8	
	<hr/>	508 8,775 28
MISCELLANEOUS		
Pollution.....	23	
Frogs.....	17	
Supervisors' regulations.....	2	
Transportation.....	3	
	<hr/>	45 2,005 50
		<hr/>
		3,271 \$55,643 79
		<hr/>

* The above tables analyze the reports received by the Commission during the calendar months. They are not to be confused with the cases actually settled and arising during the fiscal year.

GAME PROTECTORS' SHOOTING COMPETITION

INDIVIDUAL RECORDS

Position	Protector	Division	*Score
1.....	Waterhouse, W. L.....	St. Lawrence.....	438
2.....	Winslow, Alvin.....	East Adirondack.....	400
3.....	Ganey, E. R.....	Western.....	374
4.....	Hazeltan, M. R.....	South Adirondack.....	358
5.....	Pike, J. S.....	Allegany.....	346
6.....	Arnold, A. H.....	Hudson.....	344
7.....	Leland, M. B.....	East Adirondack.....	342
8.....	Abrams, A. C.....	South Adirondack.....	338
9.....	Barry, Joseph.....	Hudson.....	330
10.....	Morris, L. S.....	Allegany.....	320
11.....	Masten, C. H.....	South Adirondack.....	319
12.....	{ Somerville, R.....	East Adirondack.....	317
	{ Kirby, C. J.....	North Adirondack.....	317
13.....	Burmester, R. L.....	Western.....	308
14.....	{ Reed, M. L.....	North Adirondack.....	306
	{ Witherell, R. L.....	Western.....	306
15.....	Wheeler, H. S.....	North Adirondack.....	301

MEDAL WINNERS

1. Waterhouse, W. L.
2. Winslow, Alvin
3. Ganey, E. R.

DIVISION RECORDS

Position	Division	Protectors	Scores	
			Total	Average
1.....	Southern Adirondack.....	7	1,812	259
2.....	Eastern Adirondack.....	11	2,364	215
3.....	Northern Adirondack.....	9	1,915	213
4.....	St. Lawrence.....	8	1,696	212
5.....	Western.....	11	2,231	203
6.....	Hudson.....	10	1,952	195
7.....	Allegany.....	8	1,448	181
8.....	Central New York.....	10	1,782	178
9.....	Eastern.....	8	1,223	153
10.....	Ontario.....	7	812	116
11.....	Southern.....	11	1,233	111
12.....	Metropolitan and Long Island...	13	1,407	108
		113	19,875	.....
Average per protector for the year.....				176

CUP WINNER, HIGHEST AVERAGE

Southern Adirondack Division, Claude E. Underhill, Inspector.

* The above table is based on twelve shoots consisting of six shots each or a total of 720 points for the year.

COMPARISON OF FIRST AND LAST MONTH'S SHOOT

DIVISION	Pro- tectors	1917, July	1918, June	AVERAGES *		Gain
				1917	1918	
Southern Adirondack.....	7	71	247	10.14	35.29	25.15
Eastern.....	8	30	210	3.75	26.25	22.50
Central New York.....	10	65	278	6.50	27.80	21.30
Hudson.....	10	74	250	7.40	25.00	17.60
East Adirondack.....	11	87	272	7.91	24.72	16.81
North Adirondack.....	9	94	211	10.50	23.33	12.83
Western.....	11	115	255	10.45	23.18	12.75
Allegany.....	8	61	162	7.62	20.25	12.63
Metropolitan and Long Island.....	13	53	185	4.08	14.23	10.15
Southern.....	11	55	164	5.00	14.91	9.91
St. Lawrence.....	8	114	172	14.25	21.50	7.25
Ontario.....	7	60	60	8.57	8.57	.....
	113	879	2,472	.....	.....	.....
July, 1917, average for all protectors.....						7.78
June, 1918, average for all protectors.....						21.88
Increase per target per man for one year.....						14.10

GAME PROPAGATION

PHEASANTS AND EGGS PRODUCED DURING YEAR 1918

	Chenango county game farm	Jefferson county game farm	Suffolk county game farm	Totals
Number of eggs produced, 1918.....	44,135	25,833	20,140	90,108
Number of eggs distributed, 1918.....	35,635	11,443	12,240	59,318
Number of birds produced, 1918.....	4,318	4,852	3,475	12,645
Number of birds distributed, 1918.....	3,918	4,352	3,145	11,415
Number of breeders retained from pro- duction, 1918.....	400	500	330	1,230

* These two columns are a comparison of the first month's shoot (July, 1917) with the last month's shoot (June, 1918) vividly showing the improvement of the men in the divisions.

BUREAU OF INLAND FISHERIES RETURNS OF LICENSED FISHERMEN

Pounds of Fish Reported Caught During the Year 1917

	Tibbitts light, Chaumont bay, etc.	Hudson river, etc.	Lake Erie	Lake Ontario	Seneca river, Seneca and Cayuga lakes	Sodus, Fair Haven bays, etc.	Niagara river	Sandy pond	Sturgeon lines	3,069 set-lines	Eel weirs and eel pots*	Other waters deleterious	Minnows
Bees (striped)	335	1,683								Average \$.			
Bees (rock)				400									
Bullheads	31,013	21,672	72	3,483	8,395	10,562	2,960	5,886	66			5,840	
Carp	8,560	106,841	20,965	6,531	57,919	10,582	14,351	87				89,939	
Catfish													
Chasoca	9,996		865,132	390,877		148,035	18,055						
Dogfish					2,770	4,127		1,670					
Eels	39,759	5,067	50	1,155	596	290	1,330		971		35,811	522	
Free-fish (om-cod)		4,170											
Herring		49,935											
Lake trout	923		1,835	23,670									
Mullet													
Perch	28,698	17,236	79,060	5,225			2,900					733	
Pickered	16,116	316		900								2,800	
Pike (blue)	4,059		17,920	22,126			9,783						
Pike (wall-eyed)	7,938		6,115	4,245									
Shad		29,045											
Sturgeon	522	19,001	17,290	2,870			2,900		42,596			70	
Stickers	58,659	99,425	32,574	12,990	24,470	855	16,025	193	29			24,080	
Sunfish	9,325	4,156		866		7,378		2,110				340	
Whitefish	6,511		163,910	116,141									
Yellowfish													
Garfish													
Ling	3,662		8,256	46,487									
Total pounds	225,070	418,484	1,214,145	627,956	94,144	181,829	68,303	9,946	43,928		35,811	124,314	
Total value	\$19,188 65	\$41,586 76	\$98,770 90	\$55,513 00	\$6,368 68	\$16,711 60	\$5,120 33	\$1,233 71	\$12,324 34	\$19,845 00	\$3,461 77	\$7,287 57	\$17,446 39

Total pounds of fish reported as taken.....

Total value of fish reported as taken.....

3,013,936

\$334,653 30

* Building of I arge Canal has destroyed usefulness of former eel weirs in the rivers taken over by Farge Canal.

RECEIPTS OF THE BUREAU OF MARINE FISHERIES**FOR THE FISCAL YEAR FROM JULY 1, 1917, TO JUNE 30, 1918**

Rentals	\$15,550 78
Taxes	6,109 42
Penalties	131 66
License fees	680 00
Sanitary certificate tax.....	1,175 60
Recording fees	61 00
Surveys	38 24
Miscellaneous	1 00
	<hr/>
	\$23,747 70
Game tags used, 19,126.....	956 30
	<hr/>
	\$24,704 00
	<hr/> <hr/>
234 leases in force, covering acreage.....	12,276.8
622 franchises in force, covering acreage.....	13,570.6
	<hr/>
Total acreage under lease and franchise.....	25,847.4
	<hr/> <hr/>

BUREAU OF FISH CULTURE**SUMMARY OF FISH DISTRIBUTION DURING THE YEAR 1918**

Adirondack hatchery	7,115,874
Bath hatchery	1,271,724
Caledonia hatchery	39,192,257
Chautauqua hatchery	1,790,923
Cold Spring Harbor hatchery.....	249,428,425
Delaware hatchery	852,977
Fulton Chain hatchery.....	17,750,300
Linlithgo hatchery	20,740,294
Oneida hatchery	47,272,480
St. Lawrence hatchery.....	10,239,982
Warrensburg hatchery	635,168
Canal, Fort Hunter	2,142
Canal, Schuylerville	26,700
	<hr/>
	396,319,251
	<hr/> <hr/>

DISTRIBUTION OF FISH BY STATIONS

January 1, 1918, to December 31, 1918

ADIRONDACK HATCHERY

Brook fry	397,000
Brook fingerlings	559,800
Lake fry	195,000
Lake fingerlings	805,317
Landlocked salmon fingerlings.....	31,232
Frostfish fry	126,525
Whitefish fry	5,001,000
*Yellow perch .....	.....
	<hr/>
	7,115,874
	<hr/> <hr/>

* This station developed 21,000,000 yellow perch fry which were transferred to the canal ponds at Fort Hunter.

BATH HATCHERY

Brook trout fry	130,000
Brook trout advanced fry	17,000
Brook trout fingerlings	305,124
*Brown trout advanced fry.....	1,000
Brown trout fingerlings	174,600
Rainbow trout advanced fry.....	8,000
Rainbow trout fingerlings.....	36,000
Steelhead trout fingerlings.....	3,000
Lake trout fry	200,000
Lake trout advanced fry	64,000
Lake trout fingerlings.....	333,000
	<hr/>
	1,271,724
	<hr/> <hr/>

* The brown trout were produced from eggs collected at the Caledonia hatchery.

CALEDONIA HATCHERY

*Maskalonge fry	950,000
Lake herring fry	35,685,000
Brook trout fingerlings.....	60,550
Brook trout yearlings	750

* The maskalonge fry were developed from eggs collected at the Chautauqua station.

†Brown trout fingerlings.....	167,800
Rainbow trout fingerlings.....	117,300
Steelhead trout fingerlings.....	27,600
Black spotted trout yearlings.....	715
Lake trout fry	1,500,000
Lake trout fingerlings	680,275
Lake trout yearlings	2,200
Smallmouth black bass adults.....	67
	<hr/>
	39,192,257
	<hr/>

† The Caledonia hatchery furnished the brown trout eggs to the Bath and Delaware hatcheries and brown trout fingerlings to the Chautauqua hatchery for distribution.

CHAUTAUQUA HATCHERY

Brook trout fingerlings.....	259,928
*Bullhead adult	200
†Brown trout fingerlings.....	20,800
‡Maskalonge fry	1,510,000
	<hr/>
	1,790,928
	<hr/>

* The Chautauqua hatchery furnished 500 bullhead adults and 20,000 bullhead fry for the canal ponds at Schuylerville.

† The brown trout were produced at the Caledonia hatchery and sent to the Chautauqua hatchery for distribution.

‡ The Chautauqua hatchery sent maskalonge eggs to the Caledonia and St. Lawrence hatcheries for development and distribution.

COLD SPRING HARBOR HATCHERY

Brook trout fingerlings	196,275
*Brown trout fingerlings	11,600
Rainbow trout fingerlings	42,550
Flatfish fry	33,000,000
Tomcod fry	102,500,000
†Smelt fry	107,030,000
Lobster	6,648,000
	<hr/>
	249,428,425
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* Cold Spring Harbor hatchery sent brown trout eggs to the Linlithgo hatchery for development and distribution.

† Cold Spring Harbor hatchery sent 8,544,000 smelt eggs to Linlithgo hatchery and 4,272,000 to the Fulton Chain hatchery for development and distribution. This station also sent 3,204,000 smelt eggs to Tuxedo Park in exchange for brook trout yearlings.

DELAWARE HATCHERY

Brook trout fry	344,000
Brook trout advance fry	7,500
Brook trout fingerings	326,050
Brook trout adults	13
*Brown trout fry	55,000
Brown trout advance fry	3,000
Brown trout fingerlings	111,400
Brown trout adults	2
Rainbow trout advance fry	6,000
Rainbow trout adults	12
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	852,977
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* The brown trout were produced from eggs collected at the Caledonia hatchery.

FULTON CHAIN HATCHERY

Brook trout fry	55,000
Brook trout fingerlings	108,000
Lake trout fry	440,300
Lake trout fingerlings	15,000
Landlocked salmon fingerlings	72,000
*Smelt	3,800,000
†Whitefish fry	13,260,000
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	17,750,300
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* The smelt were produced from eggs furnished by the Cold Spring Harbor station.

† The Fulton Chain hatchery sent whitefish eggs to the Linlithgo and Oneida hatcheries for development and distribution.

LINLITHGO HATCHERY

Brook trout fry	210,000
Brook trout fingerlings	68,930
*Brown trout fingerlings	11,625
†Pikeperch fry	4,925,000
*Smelt fry	8,562,000

* The brown trout and smelt were produced from eggs furnished by the Cold Spring Harbor hatchery.

† The pikeperch were produced from eggs furnished by the Oneida hatchery.

‡ Whitefish fry	2,991,524
Yellow perch fry	2,225,000
Yellow perch eggs	1,740,000
Yellow perch fingerlings	2,550
Calico bass fingerlings	1,000
Rock bass fingerlings	611
Shad fingerlings	2,054
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	20,740,294
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‡ The whitefish were produced from eggs furnished by the Fulton Chain hatchery.

ONEIDA HATCHERY

Lake herring fry	2,430,000
* Whitefish fry	3,108,000
† Pikeperch fry	41,100,000
‡ Yellow perch fry	450,000
Yellow perch fingerlings	113,000
§ Smallmouth black bass fry	55,500
Smallmouth black bass advanced fry	1,000
Smallmouth black bass fingerlings	14,980
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	47,272,480
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* The whitefish were produced from eggs furnished by the Fulton Chain hatchery.

† The Oneida hatchery sent thirty-five quarts of green eggs and thirty-five quarts of eyed eggs of the pikeperch to the Linlithgo hatchery for development and distribution.

‡ The Oneida hatchery sent 1,000,000 yellow perch fry to the canal ponds at Fort Hunter

§ The Oneida hatchery sent 80,000 smallmouth black bass fry to the canal ponds at Fort Hunter

ST. LAWRENCE HATCHERY

* Maskalonge fry	1,490,000
Pikeperch fry	8,697,250
Yellow perch fingerlings	2,700
† Smallmouth black bass fry	39,000
Smallmouth black bass fingerlings	11,032
	<hr/>
	10,239,982
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* The maskalonge were produced from eggs furnished by the Chautauque hatchery.

† The St. Lawrence hatchery sent 4,500 smallmouth black bass fry to the canal ponds at Fort Hunter.

WARRENSBURG HATCHERY

Brook trout fingerlings	249,168
Steelhead trout fingerlings	43,500
Lake trout fingerlings	305,000
Landlocked salmon fingerlings	37,500
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	635,168
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CANAL, FORT HUNTER

Smallmouth black bass fingerlings.....	132
Yellow perch fingerlings	1,800
Bullhead fingerlings	210
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	2,142
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CANAL, SCHUYLERVILLE

Largemouth black bass fingerlings.....	4,300
Smallmouth black bass fingerlings.....	400
Bullhead fingerlings	22,000
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	26,700
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DIVISION OF LANDS AND FORESTS
SUPPLEMENTARY STATISTICS
1918

[203]

STATE OF NEW YORK

CONSERVATION COMMISSION

DIVISION OF LANDS AND FORESTS

CLIFFORD R. PETTIS.....*Superintendent of State Forests*
WILLIAM G. HOWARD.*Assistant Superintendent of State Forests*
ALBERT H. KING.....*Forester*
ARTHUR S. HOPKINS (in service).....*Forester*
BENSON H. PAUL (in service).....*Forester*
KARL SCHMITT*Forester*
A. B. BROOKS.....*Forester*
KINNE F. WILLIAMS.....*Forester*
A. T. DAVIS (in service).....*Forest Surveyor and Draftsman*
WILBUR F. SMITH.....*Chief Land Surveyor*
E. M. MERRILL.....*Surveyor*
LAWRENCE McGRATH.....*Examiner of Forest Lands*
A. B. STROUGH.....*Land Clerk*

REFORESTATION
NURSERY PRODUCTION

Species	NAME OF NURSERY						Total
	Saratoga	Comstock	Central Islip	Salamanca	Saranac Inn	Goldsmith	Indian Lake
White pine, 4	1,002,000		35,050	808,000	482,750	150,000	
White pine, 3		25,000	1,000	8,250	19,400		
White pine, 3*		480,000					
White pine, 2	4,000			22,000	20,500		
Scotch pine, 4	7,700	127,000	4,250	379,250	11,100		
Scotch pine, 3	40,350	109,125	82,550	31,556	12,800		
Scotch pine, 3*					57,000		
Scotch pine, 3	11,200	1,000		12,500			
Norway spruce, 4	353,850	379,000	28,800	247,275	703,350		100,000
Norway spruce, 3	9,500		1,000	2,500	120,800		
Norway spruce, 2	1,900			23,500	1,000		
Red Pine, 4	60,650	139,600	11,950	65,700	225,000		270,000
Red pine, 3	11,400		3,050	1,500	10,750		
Red pine, 2	8,000			21,500			
White cedar, 4	7,228			1,000			
White cedar, 3	13,600	9,750		15,450			
White cedar, 2	500			3,508			
Eng. larch	21,850	9,000	3,400	10,400	100		
White Ash	1,700			5,275			
Black locust	7,100	7,000	3,500	6,980			
Car. pop. cut	322,300	10,000		7,600			
Car. pop. rt. cut	700	100	1,500	1,000			
Basket willow				14,300			
Basswood				100			
Douglas fir				1,500			
	1,885,428	1,296,575	176,250	1,690,610	1,667,550	150,000	370,000
							7,236,413

UTILIZATION OF NURSERY STOCK

SPECIES	Sale to private parties	State institutions	PLANTED ON FOREST PRESERVE			Grand total
			Spring	Fall	Total	
White pine, 4	779,750	358,800	265,000	1,074,250	1,339,250	2,477,800
White pine, 3	27,650	1,000	25,000		25,000	53,650
White pine, 3 s			480,000		480,000	480,000
White pine, 2	46,500					43,500
Scotch pine, 4	410,300		5,500	113,500	119,000	529,300
Scotch pine, 3	174,475	26,900	75,000		75,000	276,375
Scotch pine, 3 s			57,000		57,000	57,000
Scotch pine, 2	24,500	200				24,700
Norway spruce, 4	310,875	22,400	1,197,000	285,000	1,482,000	1,815,275
Norway spruce, 3	13,800			120,000	120,000	133,800
Norway spruce, 2	26,400					26,400
Red pine, 4	269,600	2,100	501,200		501,200	772,900
Red pine, 3	28,400	300				28,700
Red pine, 2	29,300	200				29,500
White cedar, 3	34,850	3,700	250		250	38,800
White cedar, 4	7,600			628	628	8,228
White cedar, 2	4,200					4,200
Bar. larch	30,750	600	13,400		13,400	44,750
White ash	3,775	3,200				6,975
Black locust	22,360	2,200				24,560
Car. pop. cut.	335,600	4,200				339,800
Car. pop. rt. cut.	3,300					3,300
Basket willow	14,300					14,300
Basswood		100				100
Douglas fir	1,500					1,500
	2,597,785	425,900	2,619,350	1,593,378	4,213,228	7,236,413

INVENTORY OF STOCK IN NURSERIES DECEMBER 1, 1918

SPECIES	NAME OF NURSERY						Total
	Saratoga	Comstock	Central Islip	Salamance	Saranac Inn	Goldsmith	
White pine, 4 tr.....	212,000	1,200,000	96,376	250,000	6,750	716,000	2,481,126
White pine, 3 tr.....	520,000	280,000	49,800	180,000	572,200	534,000	2,636,000
White pine, 3 adl.....	189,000	762,000	.....	40,000	.....	.....	991,000
White pine, 3 adl.....	.....	.....	.....	.....	60,000	.....	60,000
Scotch pine, 6 tr.....	.....	.....	.....	650	.....	.....	650
Scotch pine, 5 tr.....	.....	.....	.....	500	.....	.....	500
Scotch pine, 4 tr.....	64,000	100,000	13,884	12,000	59,400	.....	249,284
Scotch pine, 3 tr.....	30,000	55,000	50,000	71,000	7,800	.....	213,800
Scotch pine, 2 adl.....	297,000	750,000	.....	638,000	667,220	.....	2,352,220
Scotch pine, 1 adl.....	370,000	348,000	.....	700,000	.....	.....	1,418,000
Norway spruce, 4 tr.....	72,000	.....	93,900	80,000	225,000	.....	470,900
Norway spruce, 3 tr.....	60,000	42,000	.....	14,000	26,800	.....	142,800
Norway spruce, 3 adl.....	.....	104,000	.....	.....	.....	.....	104,000
Norway spruce, 2 adl.....	715,000	584,000	.....	307,000	840,000	.....	2,446,000
Norway spruce, 1 adl.....	118,000	.....	.....	60,000	.....	.....	178,000
Red pine, 3 tr.....	400,000	.....	47,450	440,000	938,950	.....	1,826,400
Red pine, 2 adl.....	2,000	.....	.....	.....	.....	.....	2,000
White cedar, 4 tr.....	16,500	25,000	.....	9,000	.....	.....	50,500
White cedar, 3 tr.....	63,700	60,000	8,000	.....	.....	.....	131,700
White cedar, 3 adl.....	6,000	.....	.....	76,000	.....	.....	81,000
White cedar, 2 adl.....	.....	26,000	.....	3,500	.....	.....	29,500
White cedar, 1 adl.....	75,000	135,000	.....	300,000	.....	.....	510,000
Bar. lar., 2 adl.....	10,000	.....	.....	11,000	25,000	.....	46,000
White ash, 3 adl.....	.....	.....	.....	3,500	.....	.....	3,500
White ash, 2 adl.....	.....	13,200	.....	15,000	.....	.....	28,200
White ash, 1 adl.....	10,000	11,000	.....	10,000	.....	.....	10,000
Black locust, 1 adl.....	10,000	.....	7,800	.....	.....	.....	38,800
Willow cut.....	.....	.....	.....	10,000	.....	.....	10,000
White spruce, 1 adl.....	160,000	.....	.....	.....	.....	.....	160,000
Do格拉斯 spruce, 4 tr.....	.....	.....	.....	6,500	.....	.....	6,500
Col. B. spruce, 4 tr.....	.....	5,000	.....	16,800	.....	.....	21,800
Total.....	3,400,200	4,500,200	367,210	3,253,450	3,429,120	1,250,000	16,700,180

FOREST FIRES
SUMMARY BY MONTHS AND COUNTIES FOR 1918

COUNTY	MONTH									
	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Tot.
ADIRONDACKS										
Clinton.....	1	10	8	2	1	1	.....	.....	.....	23
Essex.....	.....	3	1	4	6	8	1	.....	.....	23
Franklin.....	.....	12	5	2	2	4	.....	.....	.....	25
Fulton.....	.....	1	4	.....	.....	1	.....	2	1	9
Hamilton.....	1	6	4	2	2	17	1	4	.....	37
Herkimer.....	.....	7	3	.....	2	6	1	.....	.....	19
Lewis.....	.....	8	6	1	1	7	2	.....	.....	25
Oneida.....	.....	3	.....	.....	.....	3	.....	2	.....	8
Saratoga.....	.....	2	3	1	1	2	.....	.....	.....	9
St. Lawrence.....	.....	9	5	4	6	9	.....	.....	.....	33
Warren.....	.....	3	4	1	4	14	2	2	.....	30
Washington.....	.....	.....	1	.....	.....	1	.....	.....	.....	2
Total, Adirondacks..	2	64	44	17	25	73	7	10	1	243
CATSKILLS										
Delaware.....	6	20	4	2	.....	3	1	.....	1	37
Greene.....	.....	6	8	.....	.....	.....	.....	.....	.....	14
Sullivan.....	3	2	.....	1	.....	.....	.....	.....	.....	6
Ulster.....	6	18	30	6	9	25	1	2	1	96
Total, Catskills.....	15	46	42	9	9	28	2	2	2	155
SUMMARY										
Adirondacks.....	2	64	44	17	25	73	7	10	1	243
Catskills.....	15	46	42	9	9	28	2	2	2	155
Grand total.....	17	110	86	26	34	101	9	12	3	398

FOREST FIRES

SUMMARY OF FOREST FIRES BY MONTHS OF OCCURRENCE
7 YEARS: 1909 AND 1913 TO 1918 INCLUSIVE

YEAR	MONTH									
	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Tot.
ADIRONDACKS										
1909.....		7	10	37	36	114	42	18	12	276
1913.....	10	27	132	73	78	176	94	27	.....	617
1914.....	2	5	98	67	32	73	13	45	14	349
1915.....	2	58	59	95	3	1	8	10	.....	236
1916.....		8	34	3	5	86	45	33	3	217
1917.....	2	28	24	10	19	55	14	5	13	170
1918.....	2	64	44	17	25	73	7	10	1	243
Total Adirondacks..	18	197	401	302	198	578	223	148	43	2,108
Average Adirondacks	2.6	28.1	57.3	43.1	28.3	82.6	31.9	21.1	6.1	301.1
CATSKILLS										
1909.....		19	5	3	21	27	3	1	2	81
1913.....	3	23	11	7	15	6	6	.....	.....	71
1914.....		2	27	8	1	2	6	16	2	64
1915.....	25	51	9	17	.....	.....	.....	3	5	110
1916.....	1	10	12	2	2	1	6	4	3	41
1917.....	1	34	18	.....	1	1	.....	.....	9	64
1918.....	15	46	42	9	9	28	2	2	2	155
Total Catskills.....	45	185	124	46	49	65	23	26	23	586
Average Catskills...	6.4	26.4	17.7	6.6	7.0	9.3	3.3	3.7	3.3	83.7
SUMMARY										
Average Adirondacks..	2.6	28.1	57.3	43.1	28.3	82.6	31.9	21.1	6.1	301.1
Average Catskills.....	6.4	26.4	17.7	6.6	7.0	9.3	3.3	3.7	3.3	83.7
Grand average.....	4.5	27.2	37.5	24.9	17.6	46.0	17.6	12.4	4.7	192.4

LIST OF MOUNTAIN STATIONS IN 1918 AND NUMBER OF FIRES REPORTED FROM EACH

STATION	Fire district	County	Town	Fires reported 1917	Fires reported 1918
Adams.....	2	Essex.....	Newcomb.....	3	.....
Ampersand.....	1	Franklin.....	Harrietstown.....	4	8
Arab.....	3	St. Lawrence.....	Piercesfield.....	.....	3
Azure.....	1	Franklin.....	Waverly.....	11	14
Bald.....	3	Lewis.....	Croghan.....	1	19
Balsam Lake.....	5	Ulster.....	Hardenburgh.....	14	17
Beaver Lake.....	3	Herkimer.....	Webb.....	1	4
Belfry.....	2	Essex.....	Moriah.....	5	4
Belleayre.....	5	Ulster.....	Shandaken.....	7	18
Black.....	2	Washington.....	Dresden.....	.....	4
Blue.....	2	Hamilton.....	Indian Lake.....	7	3
Boreas.....	2	Essex.....	North Hudson.....	3	7
Cat.....	3	St. Lawrence.....	Clifton.....	4	9
Catamount.....	3	St. Lawrence.....	Colton.....	14	14
Cathead.....	4	Hamilton.....	Benson.....	14	9
Crane.....	2	Warren.....	Johnsburgh.....	9	7
DeBar.....	1	Franklin.....	Duane.....	3	4
Dunbrook.....	2	Hamilton.....	Indian Lake.....	2	1
Fort Noble.....	4	Herkimer.....	Wilmurt.....	.....	.....
Gore.....	2	Warren.....	Johnsburgh.....	2	2
Hadley.....	4	Saratoga.....	Hadley.....	10	5
Hamilton.....	4	Hamilton.....	Lake Pleasant.....	.....	11
High Point.....	5	Ulster.....	Wawarsing.....	8	16
Hunter.....	5	Greene.....	Jewett.....	1	1
Hurricane.....	1	Essex.....	Kcenc.....	6	2
Kempshall.....	2	Hamilton.....	Long Lake.....	2	5
Loon Lake.....	1	Franklin.....	Franklin.....	5	8
Lyon.....	1	Clinton.....	Saranac.....	2	3
Makomis.....	2	Essex.....	North Hudson.....	3	3
Mohonk.....	5	Ulster.....	New Paltz.....	9	14
Moosehead.....	3	St. Lawrence.....	Colton.....	4	9
Moose River.....	3	Lewis.....	Lyonsdale.....	2	2
Mt. Morris.....	1	Franklin.....	Altamont.....	2	3
Owlshhead.....	2	Hamilton.....	Long Lake.....	2	7
Pharaoh.....	2	Essex.....	Schroon.....	6	4
Poke-O-Moonshine.....	1	Essex.....	Chesterfield.....	11	2
Prospect.....	2	Warren.....	Caldwell.....	7	8
Rondaxe.....	3	Herkimer.....	Webb.....	1	4
St. Regis.....	1	Franklin.....	Santa Clara.....	6	1
Snowy.....	4	Hamilton.....	Indian Lake.....	5	6
Stillwater.....	3	Herkimer.....	Webb.....	3	16
Swede.....	2	Warren.....	Hague.....	4	.....
T. Lake.....	4	Hamilton.....	Arietta.....	2	3
Tomany.....	4	Hamilton.....	Arietta.....	.....	4
Tooley Pond.....	3	St. Lawrence.....	Clare.....	16	24
Tremper Mt.....	5	Ulster.....	Shandaken.....	6	17
Twadell.....	5	Delaware.....	Hancock.....	14	9
Vanderwhacker.....	2	Essex.....	Minerva.....	3	6
Wakeley.....	4	Hamilton.....	Lake Pleasant.....	.....	.....
West.....	3	Hamilton.....	Long Lake.....	1	1
Whiteface.....	1	Essex.....	Wilmington.....	8	6
Woodhull.....	3	Herkimer.....	Wilmurt.....	3	5
Total.....	.....	.....	.....	256	352

ANNUAL REPORT
OF THE
DIVISION OF WATERS
1918

STATE OF NEW YORK

CONSERVATION COMMISSION

DIVISION OF WATERS

ALBERT H. PERKINS.....*Division Engineer*
ALEX. RICE MCKIM.....*Inspector of Docks and Dams*
EDWARD H. SARGENT (in service).....*Assistant Engineer of*
Water Power, Storage and Drainage
RUSSEL SUTER (in service).....*Assistant Engineer of Water*
Supply and Sewerage
FRANK D. PORTER (in service).....*Assistant Engineer*
FRANK H. MACY*Assistant Engineer*
EDWIN S. CULLINGS.....*Assistant Engineer*

EIGHTH ANNUAL REPORT
OF THE
CONSERVATION COMMISSION

DIVISION OF WATERS

To the Conservation Commission:

Herewith I transmit to you the annual report of the Division of Waters for the year ending December 31, 1918.

Respectfully yours,

A. H. PERKINS,
Division Engineer.

JANUARY 15, 1919.

REPORT OF THE DIVISION OF WATERS FOR THE YEAR ENDING DECEMBER 31, 1918

DIVISIONS OF REPORT

In accordance with the Conservation Law, the work of the Division of Waters is divided into the following parts:

- I. WATER STORAGE.**
- II. HYDRAULIC DEVELOPMENT.**
- III. RIVER IMPROVEMENT.**
- IV. DRAINAGE.**
- V. INSPECTION AND SUPERVISION OF HYDRAULIC STRUCTURES.**
- VI. WATER SUPPLY AND SEWERAGE.**

The close relation and interdependence of heads I and II make it desirable to treat them together in the report.

A general summary of the work of this division is given in the report to the Legislature required by law, including a statement outlining a water power policy for the State and recommending necessary water power legislation. This report, which is reprinted in the foregoing pages, enables the reader to obtain a general view of the work. Further details are given in the following pages.

WATER STORAGE AND HYDRAULIC DEVELOPMENT

WATER POWER RESOURCES OF THE STATE

Since the enactment of the Fuller Law in 1907, the investigation of the waterpower resources of the State has been actively and continuously prosecuted by the Conservation Commission and its predecessor, the State Water Supply Commission. Appropriations for these investigations have been regularly made by the Legislature, and the work has been prosecuted to the limit of the appropriation each year.

This work was begun by a brief preliminary survey of the State, organized and supervised by John R. Freeman, Consulting Engineer. After this survey had been completed, the policy of considering each watershed as a unit in itself and of making an intensive study of each of the principal rivers was inaugurated. This policy has been consistently followed throughout all the investigations thus far made.

All maps, plans and other data collected are on file in the office of the Conservation Commission, and much of the information obtained has been published in the annual reports of the two commissions, and in separate pamphlets containing completed reports on various rivers. In general it has not been the policy of the Commission to publish a special report on any given watershed until after the field and office investigations have been completed, but the maps and other data obtained in connection with uncompleted investigations are on file and may be consulted by any interested person.

The war has seriously interfered with our work during the past two years by making it almost impossible to obtain skilled engineers and survey assistants, and we have not been able to finally complete the survey of all the watersheds of the State as soon as was anticipated. Nevertheless our investigations have been carried to such a point that we can now state with reasonable accuracy the sum total of available water power within the State. Because of the consistent attention that has been given water

power investigation during the past eleven years, the State is now in position to take definite action for the formulation of a permanent, constructive water power policy and to proceed to put that policy into effect. We believe that all necessary data upon which to predicate such action is now available. Neither the river improvement law, which was re-enacted as Article 7 of the Conservation Law, in substantially its present form in 1911, nor Article 7-A, enacted in 1915, appear to be adequate for the full development of either water storage or water power. Further legislative action is necessary.

The following brief summary of the water power resources of the State has accordingly been abstracted from more detailed reports and studies, and published as a supplement to the annual report of the Commission to the 1919 Legislature.

Investigation Methods

The general method followed in these investigations has been, as above stated, to take up each of the principal rivers, one at a time, and to make a thorough study of its power possibilities. The first step is a preliminary inspection of the watershed with a view to locating the principal power sites and the available storage basins. A study of existing maps, reports and other data is then made, and survey parties are sent out to obtain such additional information as may be needed. This, in general, includes detail topographic surveys of the most practicable storage basins, a profile of the river, and brief surveys of each undeveloped power site. The surveys of reservoir and power dam sites are usually made only in sufficient detail to determine whether or not the storage or power project can be developed within reasonable limits of cost. Each of the developed power plants is located, the head in use is measured and detailed information is obtained as to wheel installation, use of power, probable future requirements of each industry and general market conditions. When the field work has been completed, a study of rainfall and run-off is made, estimates of economic capacity and cost of storage reservoirs are prepared and the effects of storage regulation on the flow of the stream are determined. The results of these studies are then written up for publication. The work of measuring the flow of the various streams is done in cooperation with the Water Resources Branch of the United States Geological Survey.

Present Status of Investigations

All the larger watersheds of the State have now been covered either by complete power surveys, or by reconnaissance surveys in sufficient detail to determine the approximate amount of power available. It will be noted that some field survey work remains to be done and that there is yet a considerable amount of office work that must be done before the complete detailed report for the whole State can be published.

Owing to lack of funds, sub-surface investigations have been made at only a few of the more important dam sites. Before final plans for dams and other structures can be prepared, it will be necessary to thoroughly explore the underground conditions at each dam site. This detail work, however, is very expensive, and it may properly be deferred until the particular project has been authorized and funds therefor have been provided.

Basis for Comparing Amounts of Power Available

In order that the statements of the amount of power available may be properly interpreted, the basis upon which they rest must be clearly understood. The power of a stream may be given anywhere between the amount which may be developed at the very lowest stream flow, occurring perhaps once in twenty years, and the power which may be developed by the same stream at the time of the very highest flood flow, occurring, also, perhaps once in twenty years. It is evident that somewhere between these limits lies a point such that any wheel installation added above that point would not have water enough to run it a sufficient part of the year to pay interest, depreciation and other charges upon the investment. Our investigations indicate that the power developments in the State of New York have, in general, been carried to such a point that they can be operated at full capacity about 60 per cent of the year (7.2 months). For the remaining 40 per cent of the average year some of the water wheels and the machinery dependent upon them must lie idle, unless the dependent machinery is operated by supplemental steam power. We have, therefore, taken as a basis upon which to reckon the power resources of the State the flow available for 60 per cent of the time, as explained above. This we believe is on the safe side,

because the modern tendency is to develop to a somewhat greater capacity than this basis assumes.

In regard to the use of auxiliary power, it should be pointed out that it is very rare indeed that a water power can be operated with the greatest economy in water and in investment without some steam auxiliary. In other words, if a water power is profitable when operated without steam and supplying an unlimited market, it will produce greater returns and will be more satisfactory in almost every respect if supplemented by steam or other auxiliary power.

Explanation of Data Following

The following statements briefly summarize the power possibilities of each of the principal river systems of the State. The tables following the descriptions of each river, in general, include only the details of the more important power sites on the main stream or those affected by the storage reservoirs listed at the head of each table. In addition to the power sites so listed there are on the smaller branches of these rivers and the minor streams of the State several thousand small water powers utilized by grist-mills, sawmills, small factories and local power plants. It has not yet been possible to obtain complete details of all these plants, but the sum total on each watershed, estimated from the best information available is indicated under the heading of "Minor Streams."

One of the most significant facts developed in the course of these studies is the extremely variable or "flashy" flow of even the Adirondack streams. Destructive floods in the spring are followed by summer droughts of such severity that many of the industries dependent on water power are obliged to suspend operations for two or three months each year. The flood flow on many rivers amounts to from 100 to 1,000 times the extreme low-water flow. The only practicable remedy for these conditions is the construction of storage reservoirs on the headwaters of each stream to hold back the flood waters for use during the low-water months. With adequate regulation a high state of development will be entirely feasible on all the Adirondack streams, and many of the other rivers can be greatly benefited by storage reservoirs.

Feasible sites for storage basins exist on the headwaters of all the Adirondack rivers and on some of the streams in the central and western parts of the State. The streams in the southern part of the State, however, are usually paralleled by one or more railroads and the valleys are highly developed agriculturally and industrially. This appears to preclude extensive water power development on these streams without interstate co-operation.

Explanation of Tables

In the first column of each of the tables following the descriptions of the various watersheds are listed the principal power sites, both developed and undeveloped, on the river under consideration. The second column shows the present turbine installation when it is not greater than the power made available by the present stream flow for 60 per cent of the time. Where the present installation exceeds the power made available by the present stream flow for 60 per cent of the time, the latter quantity is used. This apparently arbitrary reduction is necessary in order to place all plants on an equal basis of comparison. The third column, headed "Undeveloped Power," indicates the amount by which the power output at each site could be increased by the regulation of the stream flow with the given amount of storage and by the complete development of all commercially available head. It should be borne in mind that the given increase in power may be due to increased head, increased flow, or to both. The fourth column is a summation of the second and third columns, and indicates the total amount of power available at the given site for 60 per cent of the time with a wheel efficiency of 80 per cent.

DESCRIPTIONS OF WATERSHEDS

ALLEGHENY RIVER

The Allegheny River rises in the central part of Cattaraugus County and, including its tributary streams, the Conewango Creek and Chautauqua Lake outlet, drains an area of about 2,100 square miles within the State of New York. But little fall occurs in any of these streams within the State and the valleys are occupied by several railroads which would prevent the erection of high dams or the creation of any material amount of storage within reasonable limits of cost. The present power developments consist of about 30 small plants having an aggregate installation of 2,300 horsepower. It is estimated that perhaps 2,500 additional horsepower might be developed by a re-design of existing plants and by the development of unused power sites. The total available power, therefore, does not exceed 4,800 horsepower.

AUSABLE RIVER

This river drains a densely wooded mountainous area of 518 square miles lying on the easterly slope of the Adirondack Mountains. The mean annual rainfall is about 32 inches and the run-off averages 19 inches. The upper river is divided into two branches, one of which rises in Lake Placid and the other in the Ausable Lakes lying between Mt. Haystack and Mt. Colvin. These branches unite at Ausable Forks and, descending through a series of precipitous falls and rapids, flow into Lake Champlain.

A power survey of the river made in 1916 and 1917 indicates that many feasible sites for power development exist, and that, in common with most other streams of the State, a considerable amount of storage is necessary for the regulation of the stream flow.

Two reservoir sites were surveyed and mapped; one on the West Branch at Cherry Patch Pond and the other at Keene Valley on the East Branch. Of these the only feasible site, because of the high cost of construction, appears to be that at Cherry Patch Pond, where a storage capacity of 2.5 billion cubic feet can be developed. Another site on Black Brook near Ausable



1. The first part of the document is a list of names and addresses of the members of the committee.

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Forks was investigated, but some additional field work will be necessary to determine its feasibility. Maps, plans and profiles are on file, and a report is being prepared for publication.

Present developments utilize a total head of 228 feet and have an aggregate installation of 5,255 horsepower. With 2.5 billion cubic feet of storage at Cherry Patch Pond and full development of available head, it is estimated that a continuous power output of 27,000 horsepower could be maintained, and that for 60 per cent of the time 32,960 horsepower could be produced.

DETAILS OF STORAGE AND POWER

Storage:

2.5 b.c.f. at Cherry Patch Pond regulated for dam site.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Keeseville, including			
Ausable Chasm	3,140	9,595	12,735
Clintonville	40	2,580	2,620
Ausable Forks	200	4,600	6,000
Rome — Black Brook..	1,200		
Newman (Chubb River)	675	.....	675
Wilmington . . . . .	.....	2,060	2,060
Cherry Patch Pond... ..	.....	8,870	8,870
Total	5,255	27,705	32,960

BLACK RIVER

The Black river, with its main tributaries, the Moose and the Beaver rivers, drains the westerly slope of the Adirondack Mountains and flows into Lake Ontario at Dexter. The watershed has a total area of 1918 square miles and a mean annual rainfall of 46 inches. The annual run-off is about 27 inches.

In the course of the various canal surveys this river has been given considerable study from the viewpoint of both navigation and hydraulic power. A comprehensive study of the river as a whole was undertaken in 1916, and the field work was completed

in 1917. The office studies have been practically completed and a report is now in preparation.

All reservoir basins on the watershed have been thoroughly explored and detail topographic surveys have been made of reservoir sites at Hawkinsville on the Black River, Higley Mountain and Panther Mountain on the Moose, Beaver Lake and Stillwater on the Beaver, and Otter Lake on Otter Creek. Surveys of dam sites controlling storage basins have been made at Forestport, Bear Creek, Chubb Pond, Pine Creek, Minnehaha, Nelson Lake, Big Moose Lake, Lake Lila, Talcottville and Copenhagen. The only storage now available is that developed on the headwaters of the Black River to supply the Black River canal and the compensating reservoirs on the Moose River at Old Forge and Sixth Lake and on the Beaver River at Stillwater. The Black River canal reservoirs have an effective capacity of about 1.5 billion cubic feet. The Moose River reservoirs have a capacity of 0.8 billion cubic feet and the Stillwater reservoir about 0.9 billion cubic feet.

From the data at hand, the most feasible of the many undeveloped storage sites on this watershed appear to be the enlarged Forestport reservoir on the Black River, Higley Mountain and Panther Mountain on the Moose and Beaver Lake, Stillwater and Lake Lila on the Beaver. It is estimated that about 4 billion cubic feet of additional storage can be obtained at Forestport, about 10 billion cubic feet on the Moose River and about 6 billion on the Beaver River. The reservoir between Carthage and Lyons Falls, which was exhaustively investigated by the U. S. Deep Waterways Board, does not appear practicable because of its high cost. It is assumed that the customary diversion of about 210 second-feet south into the Mohawk watershed through the Black River Canal will continue indefinitely.

The present wheel installation on the Black River, including the Beaver and the Moose, is about 104,000 horsepower, although only about 90,000 horsepower can be operated at full capacity for 60 per cent. of the time, yet with the above mentioned reservoirs, aggregating 21.5 billion cubic feet and full development of all available head, it is estimated that about 248,440 horsepower can be produced. If some of the smaller reservoir sites at a later date prove to be feasible, this amount can be materially increased.

DETAILS OF STORAGE AND POWER

Storage:

10.0 b.c.f. storage on Moose River, regulated for McKeever.

6.0 b.c.f. storage on Beaver River, regulated for Eagle Falls.

5.5 b.c.f. storage on Black River, regulated for Forestport, but subject to a diversion of 210 sec.-ft. to supply the Black River Canal during navigation season.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
<i>Black River:</i>			
Dexter	2,620	780	3,400
Brownville	4,080	1,920	6,000
Glen Park	9,850	16,250	26,100
Watertown	14,630	10,070	24,700
Huntingtonville	1,250	6,150	7,400
Black River	4,320	10,380	14,700
Felts Mills	2,630	5,870	8,500
Great Bend	1,460	4,240	5,700
Deferiet	7,220	5,780	13,000
Herrings	3,110	2,590	5,700
Carthage	6,170	6,830	13,000
Lyons Falls	5,200	4,500	9,700
Port Leyden	1,290	2,710	4,000
Boonville	330	1,170	1,500
Leyden Bridge		2,000	2,000
Forestport (Hawkinsville)	40	5,560	5,600
<i>Moose River:</i>			
Gouldtown	4,580	1,680	6,260
Kosterville	1,685	11,780	16,000
Shuetown	800		
Agars	75		
Lyonsdale	1,660		
McKeever	1,000	800	1,800
Fowlerville		7,900	7,900
Froth Hole		6,930	6,930
Moose River		8,400	8,400
Lower McKeever		3,000	3,000
Otter Brook		1,200	1,200

Location	Power available with present installation and present flow	Undeveloped power	Total power available
<i>Moose River — concluded:</i>			
Dead Man's Gulch.....	.....	1,200	1,200
Higley Mt. Reservoir..	.....	2,100	2,100
Nelson Lake .....	.....	1,960	1,960
Minnehaha ..	.....	1,670	1,670
<i>Beaver River:</i>			
Beaver Falls	2,650	750	3,400
Croghan ..	160	210	370
Belfort ..	1,950	190	2,140
Taylorville ..	3,600	1,080	4,680
Elmer Falls	1,300	380	1,680
Effley Falls	1,770	460	2,230
Eagle Falls	4,000	3,100	7,100
High Falls .....	.....	4,450	4,450
Soft Maple Dam.....	.....	5,700	5,700
Moshier Creek .....	.....	7,270	7,270
Total	89,430	159,010	248,440

CHATEAUGAY RIVER

This river drains the Chateaugay Lakes and flows northerly across the Canadian boundary into the St. Lawrence River. The drainage area within the State of New York is 163 square miles. Because of its small size the Chateaugay River has to the present date been covered by reconnaissance survey only. This survey indicates that from 3 to 4 billion cubic feet of water can be impounded in the Chateaugay Lakes for the regulation of the river, which has a total fall of 990 feet between the lakes and the Canadian boundary, a distance of about 13 miles.

The present installation is about 5,500 horsepower, but it is estimated that, with the above-mentioned storage and full development of available head, at least 8,000 horsepower of additional power can be created, making the total output of the river about 13,500 horsepower.

DELAWARE RIVER

The Delaware River was thoroughly studied in 1908 and 1909; a profile of the river, to Port Jervis, was run, and topographic surveys of the most attractive storage sites were made. The Delaware watershed in New York State lies almost entirely in Delaware and Sullivan Counties. For sixty miles the river forms the boundary between Pennsylvania and New York. At Port Jervis the watershed comprises 3,423 square miles, of which 2,404 square miles lie in New York and the remainder in Pennsylvania. The mean annual rainfall is about 41 inches, and the run-off about 23 inches.

In common with the other rivers of southern New York, the Delaware has a very uniform slope with little or no concentrated head within the State; the fall between Hancock and Port Jervis averages but 6.5 feet per mile. The valley is occupied by farms and villages, and the river shores are paralleled by railroads and highways, making extensive power development very high in cost. Two of the most attractive storage basins were surveyed in 1908 and 1909. One, on the west branch, near Cannonsville, would have an available capacity of 7 billion cubic feet, with flow line at elevation 1,120. The other would be created by damming the river at Narrowsburg and raising the water to elevation 735. The capacity would be 0.9 billion cubic feet; about 60 feet of head would be made available for power purposes. With these two reservoirs in operation it was estimated that the ordinary low-water flow of about 400 second-feet at Port Jervis could be increased to at least 2,400 second-feet. These reservoirs would also have a considerable value in the control of floods, and to power sites below the New York State boundary; however, this is an interstate matter which should be taken up in co-operation with New Jersey and Pennsylvania. Topographic maps of reservoir basins, plans and estimates are on file.

The present power development of the river in New York State amounts to only 3,400 horsepower, but it is estimated that the above-mentioned storage would make possible the development of at least 40,000 additional horsepower above Port Jervis, though probably at a rather high cost.

GENESEE RIVER

The Genesee River rises in northern Pennsylvania and flows northerly across New York State and into Lake Ontario a few miles below the city of Rochester. The total area of the watershed is 2,387 square miles, the mean annual rainfall about 33 inches, and the average run-off about 14 inches. This river is one of the most "flashy" in the State. It is subject to disastrous floods and to unusually low summer flows.

A detailed study of the watershed was made during the years 1908 and 1909, with a view to determining its storage and power possibilities. A most desirable reservoir site lies just above Portage Falls, extending from Portage up stream about 16 miles to a point near Fillmore. The capacity of this reservoir is estimated at 13.4 billion cubic feet. Between the crest of the proposed reservoir dam and Lake Ontario the river has a fall of 966 feet. Of this fall about 425 feet is concentrated in the Portage Falls immediately below the reservoir dam site and within the limits of Letchworth Park, which is owned by the State. About 150 feet of fall occurs in the Genesee Gorge between Portage and Mt. Morris and about 242 feet in the four falls within the city of Rochester.

The studies of 1908 and 1909 included detail surveys of the Portage reservoir site and the whole valley of the Genesee between Portage and Rochester. Land lines and flood limits were located and thorough underground investigations at the Portage dam site were made. Preliminary plans for dams, control works and power development were made, together with estimates of quantities, costs and benefits. Final plans for this improvement can be prepared as soon as the project is definitely authorized.

The present development below the proposed Portage Reservoir is about 28,450 horsepower, and it is estimated that on the smaller tributary streams about 5,000 additional horsepower has been developed, making a total of 33,450. With 13.4 billion cubic feet of storage the power output below the reservoir could be increased by approximately 64,830 horsepower, making the total available power on the watershed about 98,280 horsepower as indicated below. The reservoir would also afford a high degree of protection against the floods which periodically inundate large

sections of the city of Rochester and about 25,000 acres of fertile land in the Genesee Valley between Rochester and Mt. Morris, and in the Canaseraga Valley between Mt. Morris and Groveland.

On this watershed there are two other smaller basins which offer attractive possibilities for water storage for the regulation of the lower reaches of the Genesee, or for immediate use during the construction of the larger reservoir at Portage. The first of these basins is Conesus Lake, and the second Honeoye Lake.

Conesus Lake, with a tributary watershed of 89 square miles, has a water surface of approximately 5 square miles. The difference in stage between high and low water in the lake is approximately 4 feet. By building a low dam across the outlet, with suitable regulating gates, the water surface could be maintained at flood stage, or about 4 feet higher than usual during the summer season, and the stored water could be withdrawn for power purposes during the late summer and fall or winter. The large number of cottages on the shores prevents a raise greater than 4 feet, except at prohibitive cost. Detail surveys have not yet been made, but it is estimated that about 500 million cubic feet of water could be stored in this manner and that the cost should not exceed \$10,000. This storage would benefit chiefly the water powers at Rochester.

Honeoye Lake, situate a few miles to the east, has a watershed of 40 square miles and a surface area of 2.6 square miles. By means of a low earth dam from 15 to 18 feet high and about one-half mile long across the outlet, the surface of the lake could be raised from 12 to 15 feet above low-water stage and about 1 billion cubic feet of water could be impounded. The total cost is estimated at from \$75,000 to \$100,000. There are but few cottages on the shores and but little valuable property would be affected. Several mills on Honeoye Creek, as well as the water powers at Rochester, would be benefited by this reservoir.

DETAILS OF STORAGE AND POWER

Storage:

13.4 b.c.f. storage at Portage, regulated for Portage.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Rochester	*27,710	8,630	36,340
Geneseo	100	1,010	1,110
Mt. Morris	500	1,530	2,030
Mt. Morris Gorge . . . . .	.....	17,000	17,000
Portage	140	36,660	36,800
Powers on minor streams	5,000	.....	5,000
Total	33,450	64,830	98,280

GRASS RIVER

Rising in Massawepie Lake and draining the central part of St. Lawrence County, the Grass River flows into the St. Lawrence a few miles below Massena Springs. The drainage area at the mouth is 629 square miles. It has a mean annual rainfall of about 37 inches, and the average run-off is estimated at 23 inches.

A power survey of this river was begun in 1917, and discontinued when about 75 per cent completed because of war conditions. Office studies are about 50 per cent completed. Maps, plans and profiles are on file.

The most practicable reservoir site appears to be that at Clare, where by damming the two main branches of the river a storage capacity of 3 billion cubic feet can be obtained within reasonable limits of cost. Another storage site exists at Copper Rock Falls near Newbridge, and a third at a point a few miles further up stream. The latter two sites were under investigation when field work was temporarily discontinued. It appears probable that at least 2 billion cubic feet of storage capacity can be obtained at these two points. About fifty years ago a small reservoir was created at "Grass River Flow" by damming the outlet of an

* The water powers in the city of Rochester are undergoing an extensive re-development which will materially alter this figure.

extensive area of swamp land. This dam, however, has become so dilapidated that its repair does not seem practicable. A new dam would be prohibitive in cost, considering the amount of storage available.

The total power installation on the Grass River at present amounts to about 3,185 horsepower, but, with full development of feasible undeveloped sites and the utilization of 5 billion cubic feet of storage in the above-mentioned reservoirs, it is estimated that the total power output could be increased to perhaps 31,000 horsepower available for 60 per cent of the time. These estimates, however, are tentative, and are subject to revision when the survey work shall have been completed.

DETAILS OF STORAGE AND POWER

Storage:

2.0 b.c.f. above Copper Rock Falls, regulated for Copper Rock Falls.

3.0 b.c.f. at Clare, regulated for dam site.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Massena	100	1,700	1,800
Louisville	100	1,400	1,500
Chase Mills . . . . .	.....	1,180	1,180
Chamberlain . . . . .	.....	1,450	1,450
Madrid	155	1,275	1,430
Canton	580	1,010	1,590
Pyrites	2,250	3,480	5,730
Jackson Falls . . . . .	.....	1,150	1,150
Clare Reservoir . . . . .	.....	8,310	8,310
Sinclair Falls . . . . .	.....	1,310	1,310
Clifton Falls . . . . .	.....	1,080	1,080
Rainbow Falls . . . . .	.....	2,360	2,360
Copper Rock Falls . . . . .	.....	1,650	1,650
Total	3,185	27,355	30,540

HUDSON RIVER

The Hudson River, with its main tributary, the Mohawk, drains the southeastern and central eastern sections of New York State. Rising on the slopes of Mt. Marcy, it flows in a southerly direction, generally paralleling the easterly boundary of the State, and empties into New York Bay. The area of the whole watershed is approximately 13,366 square miles, including small areas in Vermont, Massachusetts, Connecticut and New Jersey. For convenience in making power studies, the Hudson watershed has been divided into three sections, the first of which, known as the Upper Hudson, includes the area above the Troy dam, the head of navigation, exclusive of the Mohawk River; the second section includes the Mohawk watershed; the third, termed the Lower Hudson, includes the area below Troy.

The Upper Hudson watershed is rugged and mountainous, and, in general, is well wooded. The drainage area at Troy is 4,616 square miles, the mean annual rainfall about 41 inches, and the run-off 24 inches. Most of the water powers occur in this section of the Hudson watershed. A thorough investigation of its storage and power possibilities was made during the years 1908, 1909 and 1910. It was found that suitable storage basins exist for a high degree of stream flow regulation, within reasonable limits of cost. The principal reservoir sites investigated were the Sacandaga, on the Sacandaga River between Conklingville and Northville, where 30 billion cubic feet of storage capacity can be obtained; Indian Lake, 10 billion cubic feet (including 4.6 billion cubic feet now in use); Schroon Lake, 12 billion cubic feet; Schroon Falls (above Schroon Lake) 7 billion cubic feet, and Lakes Pleasant, Sacandaga and Piseco, 5 billion cubic feet. Other reservoirs investigated include Lake Harris, Rich Lake, Sanford Lake, Essex Chain Lakes, Goodenow Flow and Cheney Pond. It appears feasible to develop considerable storage at each of these points, but the demand for additional storage at these remote parts of the watershed is so far in the future that they have not yet been studied in great detail.

Preliminary investigations for the Sacandaga reservoir have been made with sufficient completeness that final plans can be prepared as soon as the project is definitely authorized. Topo-

graphic surveys have been made, property lines located, and sufficient underground investigation has been made at the dam site to determine the type of dam best suited to this location.

The Schroon Lake reservoir has also been worked up with a similar degree of completeness. These studies, however, indicate that, while physically the lake is especially well suited to storage purposes, there are so many valuable hotels and cottages on its shores that the cost of acquiring these properties would be prohibitive. As a substitute for this reservoir, another site has been located at Schroon Falls, a few miles above Schroon Lake. At this point storage capacity of about 7 billion cubic feet can be developed without affecting any property of material value, except a few miles of state road.

Dam site surveys have been made and sufficient topographic data have been obtained to determine the capacity and feasibility of the proposed reservoir on the Indian and Cedar Rivers, on the headwaters of the Sacandaga River, and the above-mentioned smaller storage basins on the Upper Hudson in the vicinity of Newcomb. Profiles of the Hudson, Sacandaga and Indian Rivers have been run and power sites have been located and measured. All maps and other data are on file.

Owing to its close proximity to large industrial centers, the Hudson has been developed to a greater extent than most of the other inland rivers of the state. The present installation is about 133,000 horsepower, but under present conditions only about 29,000 horsepower can be produced at extreme low water and only about 103,000 horsepower can be operated at full capacity for 60 per cent of the time.

With two of the most practicable reservoirs in use, namely the Sacandaga, with 30 billion cubic feet, and Indian Lake, with a total of 10 billion cubic feet, it is estimated that the low-water output of the present plants could be increased to 107,000 horsepower and that for 60 per cent of the time about 174,000 horsepower could be produced. With full development of all available head below the reservoirs, the output for 60 per cent of the time could be increased to 339,000 horsepower. Additional storage on the Schroon River and on the upper reaches of the Sacandaga and Hudson rivers would materially increase these quantities.

On the Hoosick River, Batten Kill, Fish Creek and other smaller streams there are developments totaling about 64,000 horsepower, while the amount of power at undeveloped sites on these streams is estimated at 56,000 horsepower.

The Lower Hudson watershed is drained by a large number of relatively small streams, several of the largest of which are included in the water supply system of the City of New York. The total present installation is about 32,600 horsepower, while at undeveloped sites perhaps 31,000 additional horsepower could be produced, making the total available power resources about 63,600 horsepower.

The Mohawk River will be considered by itself as a separate watershed at a later point in this report.

DETAILS OF STORAGE AND POWER

Storage:

- 30 b.c.f. of storage in Sacandaga Reservoir, regulated for Hadley.
- 10 b.c.f. of storage in Indian Lake Reservoir, regulated for dam site.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Troy . . . . .	.....	11,370	11,370
Low. Mechanicville....	7,420	1,885	9,305
Upper Mechanicville ..	7,855	1,995	9,850
Stillwater	1,024	5,686	6,710
Thomson	3,810	2,525	6,335
Fort Miller	1,291	4,284	5,575
Fort Edward	4,855	1,935	6,790
Hudson Falls	17,820	8,940	26,760
Glens Falls	10,165	5,865	16,030
Feeder Dam	600	4,730	5,330
Spier Falls	20,660	8,640	29,300
Palmer Falls	23,100	10,280	33,380
Corinth	2,392	6,138	8,530
Hadley	2,067	8,413	10,480
Waterford* . . . . .	.....	3,305	3,305

*Additional power available on Barge Canal due to regulation.

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Sherman Island . . . . .	.....	24,480	24,480
Millington Brook . . . . .	.....	7,280	7,280
The Glen . . . . .	.....	3,490	3,490
Gage Mountain . . . . .	.....	6,820	6,820
Huckleberry Mountain. . . . .	.....	20,270	20,270
North River . . . . .	.....	9,110	9,110
Kettle Mountain . . . . .	.....	26,090	26,090
Indian River Reservoir. . . . .	.....	12,265	12,265
Sacandaga Reservoir .. . . .	.....	86,805	86,805
Subtotal	103,059	232,101	335,160
Minor streams	64,000	56,000	120,000
Lower Hudson	32,600	31,000	63,600
Total	199,659	819,101	518,760

MOHAWK RIVER

Rising in the northern part of Oneida County, the Mohawk River drains the east central part of the State and, flowing in a general southeasterly direction, empties into the Hudson just above Troy. Its chief tributaries are the Schoharie, West Canada and East Canada creeks. The diversified topography of its watershed includes the rolling farm lands in the vicinity of Rome and Utica, the rugged Catskills on the south and the wooded foothills of the Adirondacks on the north. The watershed has an area of 3,484 square miles, a mean annual rainfall of 42 inches and a run-off of about 24 inches. Through the greater part of its length the river has been canalized and made a part of the Barge Canal.

A complete power survey of the Schoharie Creek was made in 1914 and a report thereon has been published in our Fifth Annual Report. Three reservoir sites were located and surveyed, but the water from the upper reaches of the watershed has been acquired by the City of New York and will be diverted into the Ashokan reservoir by means of a high dam at Gilboa and an

eighteen-mile tunnel. The diversion of this water will probably preclude any material power development on this stream.

The West Canada Creek drains the extreme northerly part of the watershed and flows into the Mohawk at Herkimer. A storage reservoir having a capacity of 3.4 billion cubic feet has been constructed at Hinckley to supply the summit level of the Barge Canal. The water from this reservoir will be diverted from the West Canada Creek at the foot of Trenton Falls and into the Mohawk through Nine Mile Creek. The principal power development is at Trenton Falls, where a head of 264 feet has been utilized by a power plant having a wheel capacity of 26,000 horsepower. This plant supplies power to the cities of Utica and Little Falls and surrounding towns. For power purposes, the capacity of the Hinckley reservoir should be increased to about 8 billion cubic feet. This can be accomplished by raising the Hinckley dam or by developing new storage at points farther up stream. With 8 billion cubic feet of storage the power producing capacity of the stream for 60 per cent of the time could be increased to at least 42,500 horsepower, in addition to the water requirements of the Barge Canal.

The East Canada Creek rises in southern Hamilton County and flows into the Mohawk near St. Johnsville. Some small storage reservoirs have been privately constructed on the headwaters of this stream and power developments to the extent of about 5,500 horsepower have been made. With full development of available head and storage possibilities, it is estimated the power output of the stream could be increased to 26,000 horsepower.

The principal power developments on the Mohawk River are at Little Falls and Cohoes. The Cohoes plant has a turbine capacity of 30,000 horsepower, while at Little Falls the aggregate installation is about 2,500 horsepower. Including the small developments on the minor streams of the watershed, the total installation on the Mohawk River and tributaries is estimated at 78,000 horsepower. The construction of the Barge Canal has also made available large amounts of power at Crescent, Visscher Ferry, and other points, but these powers will be considered separately under the head of Barge Canal Powers. The water from the Barge Canal storage reservoirs at Hinckley and

Delta, having capacities of 3.4 and 2.75 billion cubic feet respectively, will effect a considerable regulation of the low-water flow of the Mohawk River in addition to supplying the water required for lockage.

It is estimated that with full development of available head and storage facilities on the Mohawk watershed the power output for 60 per cent of the time can be increased to at least 128,000 horsepower, exclusive of the strictly Barge Canal powers, as indicated below.

DETAILS OF STORAGE AND POWER

Storage:

- 2.75 b.c.f. at Delta, regulated for navigation.
- 3.4 b.c.f. at Hinckley, regulated for navigation.
- 4.6 b.c.f. at Hinckley, regulated for power.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
West Canada Creek...	29,000	13,500	42,500
East Canada Creek ...	5,500	20,500	26,000
Mohawk River	32,500	6,000	38,500
Minor streams	11,000	10,000	21,000
Total	78,000	50,000	128,000

NIAGARA RIVER

The gross fall between the normal water surfaces of Lake Erie and Lake Ontario is 327 feet. The flow of the Niagara River varies from about 170,000 to 260,000 second-feet, with approximately 207,000 second-feet available for 60 per cent of the time. The drainage area at the outlet of Lake Erie is approximately 244,700 square miles. Assuming that 297 feet of head could be economically developed, with a wheel efficiency of 80 per cent, the total available power of the Niagara River would amount to 4,580,000 horsepower at extreme low water, and for 60 per cent of the time about 5,590,000 horsepower. This assumes the complete use of the whole flow of the Niagara River.

The amount of flow, however, which can be diverted from Niagara Falls for power purposes is limited by treaty between the United States and Great Britain to 56,000 second-feet, 36,000 on the Canadian side and 20,000 on the American. These flows used through a net head of 297 feet would produce, at 80 per cent efficiency 540,000 horsepower on the American side and 972,000 horsepower on the Canadian side. The present development at Niagara Falls is about 265,000 horsepower on the American side and about 388,500 on the Canadian side, making a total of 653,000 horsepower.

A re-development of the plants on the American side is now under way. It is understood that these improvements contemplate the use of the entire 20,000 second-feet diverted under the present treaty through the enlarged hydraulic power canal under a working head of approximately 210 feet. If these improvements are completed as outlined above, the amount of continuous power available will be increased to about 382,000 horsepower. By utilizing the same flow through the fall in the rapids between Suspension Bridge and Lewiston about 158,000 additional horsepower could be produced.

OSWEGATCHIE RIVER

The main branch of the Oswegatchie River rises in Cranberry Lake, and, flowing in a general northwesterly direction, joins the West Branch at Talcville and empties into the St. Lawrence River at Ogdensburg. The drainage area is 1,590 square miles, the mean annual rainfall 36 inches, and the run-off 19 inches. A thorough investigation of the water power possibilities of this watershed was made in 1911 and 1912. A profile of the river was run and topographic surveys of the most promising reservoir sites were made.

Nearly 50 years ago a storage reservoir was created at Cranberry Lake by a commission of power owners acting under authority of an act of Legislature. The present reservoir has a capacity of about 2.5 billion cubic feet, and has been in constant use since the date of its construction. The capacity could be increased to 3.0 billion cubic feet by raising the crest of the dam one foot. Another reservoir of 3.0 billion cubic feet can be created by flooding the Chaumont Swamp lying just above Newton Falls. On the West Branch about 5.0 billion cubic feet of

storage can be obtained by damming the river at a point about two miles above the Village of Harrisville. With these three reservoirs, having a total capacity of 11.0 billion cubic feet, it is estimated that it would be possible to maintain a continuous flow of 950 second-feet at Ogdensburg, and that for 60 per cent of the time at least 1,780 second-feet would be available.

With the stream flow as regulated by existing storage in Cranberry Lake, the power output of the river is about 21,200 horsepower for 60 per cent of the time. At extreme low water the output falls below 8,000 horsepower. With 11 billion cubic feet of storage and full development of available head, the continuous power output would exceed 51,000 horsepower, and for 60 per cent of the time over 79,000 horsepower could be produced. A pamphlet has been published giving the results of the work of the Commission on this river.

DETAILS OF STORAGE AND POWER

Storage:

- 6.0 b.c.f. storage above Newton Falls, regulated for So. Edwards.
- 5.0 b.c.f. storage above Harrisville, regulated for Talcville.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Ogdensburg	1,450	490	1,940
Heuvelton	180	1,360	1,540
Rensselaer Falls	330	760	1,090
Elmdale	50	2,710	2,760
Wegatchie	75	2,765	2,840
Natural Dam	2,450	1,140	3,590
Gouverneur	285	580	865
Hailesboro	3,840	12,060	15,900
Emeryville	2,390	1,130	3,520
Hyatt		2,730	2,730
Talcville — E. Branch.	457	1,343	1,800
Edwards	250	315	565
South Edwards	4,480	3,970	8,450
Fine	150	2,750	2,900
Brown's Falls	1,320	7,250	8,570
Newton Falls	1,300	530	1,830

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Talcville — W. Branch.	440	560	1,000
Fullerville	618	1,582	2,200
Harrisville	1,057	1,673	2,730
Kimball's Mill	102	.....	102
Eel Weir Rapids.....	.....	2,100	2,100
Madison Chute .....	.....	4,920	4,920
Flat Rock .....	.....	2,500	2,500
Hazelton Falls .....	.....	700	700
Harris Rapids .....	.....	1,450	1,450
Gales Rapids .....	.....	730	730
Subtotal	21,224	58,098	79,322
Indian River and minor streams	3,514	.....	3,514
Total	24,738	58,098	82,836

OSWEGO RIVER

This river drains the central part of the State, and includes in its watershed Oneida, Onondaga and the "Finger" lakes. Its drainage area at Oswego, where it empties into Lake Ontario, is 5,098 square miles. The mean annual rainfall is about 37 inches, and the average run-off about 18 inches.

Owing to the large number of natural storage basins within its watershed, this river has a much more regular flow than most of the other rivers of the State. The entire length of the Oswego River, together with Oneida Lake and most of the Seneca River, has been canalized in course of the construction of the Barge Canal. Because of the use of the river for navigation and the fact that the shores of most of the lakes are well built up, it does not seem practicable to attempt the artificial regulation of the river, beyond such regulation as may be incidental to the operation of the canal.

The power plants on the Oswego and Seneca Rivers are now in process of re-development, made necessary by the construction of the Barge Canal. The present installation and amount of power

available on these rivers and the smaller streams of the watershed are indicated below. As the subject of water power on this watershed has been exhaustively studied by the State Engineer in the adjudication of damage claims arising from the canalization of the Oswego and Seneca rivers, it has not been investigated in detail by this Commission.

DETAILS OF STORAGE AND POWER

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Oswego River	31,300	14,648	45,948
Seneca River	7,300	550	7,850
Minor streams	20,000	10,000	30,000
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Total	58,600	25,198	83,798
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RAQUETTE RIVER

The Raquette River drains the central part of the Adirondack Plateau, and, flowing in a general northerly direction, enters the St. Lawrence River near Massena Springs. The drainage area is 1,269 square miles, the mean annual rainfall about 40 inches, and the run-off about 25 inches. A complete survey of the watershed has been made and the results have been published in pamphlet form.

This watershed with its many lakes and ponds offers unusual opportunities for the creation of storage reservoirs. The most practicable basin was found to be the Oxbow Swamp, lying about two miles above the village of Tupper Lake. At this place 15 billion cubic feet of storage can be obtained at very low cost, and about one billion cubic feet of additional storage can be impounded in Big Tupper Lake and Raquette Pond without interfering in any way with the present uses of those bodies of water.

Another reservoir basin having a capacity of about two billion cubic feet and lying between Stark and Holleywood was investigated in detail, but because of its relatively high cost and the high degree of regulation provided by the proposed Oxbow and

Raquette Pond reservoirs, it does not appear that the Stark reservoir will be necessary for many years to come. Detail topographic maps, plans, profiles and estimates are on file.

With 16 billion cubic feet of storage, the run-off at Piercefield can be almost completely controlled. It is estimated that the minimum flow at Piercefield would be increased from 96 second-feet to 1,180 second-feet, while the flow available for 60 per cent of the time would be increased from 750 to 1,230 second-feet.

Of 1,390 feet of fall between Piercefield and the St. Lawrence River, at least 1,250 feet can be economically developed. The total amount of head in use at present is 350 feet, and the present installation on the watershed is about 50,000 horsepower, but of this installation only about 30,500 horsepower can be operated at full capacity for 60 per cent of the time. With the proposed regulation and full development, about 139,000 horsepower would be available throughout the year, and for 60 per cent of the time about 169,800 horsepower could be produced.

DETAILS OF STORAGE AND POWER

Storage:

15.0 b.c.f. storage in Oxbow Reservoir, regulated for Piercefield.

1.0 b.c.f. storage in Tupper Lake, regulated for Piercefield.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Raymondville	1,685	785	2,470
Norfolk	4,145	2,075	6,220
East Norfolk	2,950	1,820	4,770
Yaleville	970	750	1,720
Norwood	2,030	970	3,000
Unionville	1,640	1,060	2,700
Hewittville	1,250	1,450	2,700
Sissonville	900	1,230	2,130
Potsdam	800	480	1,280
Hannawa Falls	7,530	3,800	11,330
Higley Falls	4,000	2,000	6,000
Piercefield	2,385	1,645	4,030
Nyando .....	.....	2,300	2,300

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Kents Mill	2,610	2,610
Lower Hannawa	2,760	2,760
*Colton.....	35,660	35,660
South Colton	40	13,760	13,800
Five Falls	11,200	11,200
Rainbow Falls	8,570	8,570
Leonard Falls	3,540	3,540
Little Falls	4,450	4,450
Blake	3,950	3,950
Stark	10,420	10,420
Halls Rapids	5,640	5,640
Jamestown Falls	5,600	5,600
Moosehead Rapids	5,200	5,200
Sol's Island	2,520	2,520
Raquette Falls	1,480	1,480
Buttermilk Falls	900	900
Round Lake Outlet....	635	635
Bog River	215	215
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Total	30,540	139,260	169,800
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ST. LAWRENCE RIVER

Between Ogdensburg and Massena Point, the St. Lawrence River has a total fall of 85 feet. Revised stream flow data indicate that the flow of the river varies between 184,000 and 350,000 second-feet with approximately 239,000 second-feet available for 60 per cent of the time. The area of the watershed at the outlet of Lake Ontario is about 278,700 square miles. Assuming that 60 feet of head could be economically developed, the power output with a wheel efficiency of 80 per cent would exceed 1,000,000 horsepower at extreme low water, and for 60 per cent of the time about 1,300,000 horsepower would be available. Dividing equally between Canada and the United States, there would be

* Development now under way.

available in each country about 500,000 horsepower of continuous power, or 650,000 horsepower for 60 per cent of the time. A development of about 86,000 horsepower has already been made at Massena by constructing a canal four miles long from the St. Lawrence to the Grass, using the Grass River as a tail race.

ST. REGIS RIVER

This river has its sources in southern Franklin county on the northern side of the Adirondack Plateau. It flows in a general northerly direction and empties into the St. Lawrence River a few miles east of Massena Springs. The drainage area is 847 square miles. The mean annual rainfall is about 37 inches, and the run-off 24 inches. A detailed survey of the watershed has recently been completed, and a report thereon is now on the press. Maps, plans and estimates are on file.

From these investigations it appears that a reasonably high degree of streamflow regulation can be accomplished by means of three storage reservoirs. Of these sites the first, having a capacity of 1.8 billion cubic feet, is on the Everton Branch at Everton; the second, on the East Branch at Brandon, would have a capacity of 1.4 billion cubic feet; and on the West Branch at "Five Mile Level," about 2.4 billion cubic feet can be obtained. Other reservoir sites at St. Regis Falls, Santa Clara and Sylvan Falls were thoroughly investigated, but at these places construction costs and property damages would be so high that the advantage appears to lie with the smaller reservoirs above named.

Profiles and power site surveys of the three branches of the river indicate that the stored water in the Everton reservoir could be effectively used through about 1,285 feet of head; the Brandon reservoir through 1,402 feet; and the Five Mile reservoir through 1,240 feet of head. These heads presume the complete development of all commercially feasible head below each reservoir.

The present installation on the river is 4,777 horsepower, of which about 4,300 horsepower can be operated at full capacity 60 per cent of the time. With the above-mentioned storage in use and full development of available head, the power output of the river for 60 per cent of the time could be increased to 65,500 horsepower, as indicated below. Owing, however, to the remote location of this river, and the relatively high cost of

development of its principal power sites, it does not appear probable that its full development can be brought about for a considerable number of years.

DETAILS OF STORAGE AND POWER

Storage:

- 1.4 b.c.f. storage at Brandon, regulated for Brandon.
- 1.8 b.c.f. storage at Everton, regulated for St. Regis Falls.
- 2.4 b.c.f. storage at Five Mile, regulated for dam site.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Hogansburg	330	707	1,037
Brasher Falls	595	4,665	5,260
Skinnerville	120	157	277
Sanfordville	85	77	162
W. Stockholm	297	297	594
Allen's Falls	155	6,345	6,500
Parishville	70	2,990	3,060
Sylvan Falls	20	3,198	3,218
Buckton	50	2,312	2,362
Fort Jackson	245	5,865	6,110
Nicholville	700	7,832	8,532
Day's Mill	100	2,310	2,410
St. Regis Falls — El. Lt. Plant	320	3,170	3,490
St. Regis Falls — Saw Mill	100	2,420	3,520
St. Regis Falls — Pulp Mill	800		
St. Regis Falls — Stave Mill	200		
One-half mile above Helena		1,275	1,275
Winthrop		3,641	3,641
Whitaker Falls		2,224	2,224
One and three-quarters miles above Parish- ville.....		1,205	1,205

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Cox Falls	1,303	1,303
High Falls	651	651
Bruner Falls	594	594
One-half mile below Five Mile Dam.....	1,430	1,430
Five Mile Reservoir...	1,098	1,098
Day's Mill—Upper Site	3,599	3,599
Santa Clara — Lower Site	895	895
Santa Clara — Upper Site	860	860
Spring Cove	657	657
Day's	889	889
Brandon Reservoir	720	720
Total	4,187	63,386	67,573

SALMON RIVER (FRANKLIN COUNTY)

There are in this State two streams bearing the name of Salmon River, one of which lies almost entirely in Franklin County, the other in Oswego and Lewis Counties. The Franklin County stream has its headwaters on the wooded slopes of the Loon Lake Mountains and the Elbow Range and, flowing in a northwesterly direction, crosses the State line at Fort Covington and empties into the St. Lawrence River. Owing to the small size of this stream and its remote location, it has not yet been surveyed in detail, but preliminary investigations indicate that it has considerable possibilities for power development, and that it is worthy of detail study at a later date.

The watershed has an area of 377 square miles within the State of New York. The mean annual rainfall is about 35 inches, and the run-off, based upon the measured flow of adjacent streams, should be about 22 inches. A very promising storage basin lies on the plateau above Titusville, where a low dam founded on rock would flood perhaps 3,600 acres of swampy land and impound 2.5

billion cubic feet of water. This basin contains but little valuable property, and its capacity would provide nearly complete regulation of the stream flow at Chasm Falls.

Between the reservoir dam site and the State line, the river has a total fall of about 1,285 feet, a large part of which is concentrated in the precipitous falls and rapids in the vicinity of Chasm Falls and Malone. With the above mentioned storage it would appear practicable to develop at least 800 feet of this fall. The present useful installation does not exceed 5,000 horsepower, but with 2.5 billion cubic feet of storage and full development of available head, the power output for 60 per cent of the time could be increased to at least 16,000 horsepower.

SALMON RIVER (OSWEGO COUNTY)

This river rises in the southwestern part of Lewis County and drains the northern part of Oswego County. Due to its location on the westerly slope of the high ridge paralleling the eastern end of Lake Ontario, it receives an exceptionally high rainfall. The available streamflow records indicate the unusually high run-off of 46 inches per annum. The drainage area of the stream at its mouth is about 272 square miles.

The principal power development on the river is at Salmon Falls, where a head of approximately 256 feet has been developed, and a storage reservoir has been constructed. The installation at this plant is 32,000, but less than half this capacity can be continuously operated for 60 per cent of the time. The plant is used largely to carry peak loads on the light and power system in the city of Syracuse, to which it is connected.

Between this plant and Lake Ontario the river falls more than 400 feet, nearly all of which can be developed within reasonable limits of cost. It also appears feasible to increase the storage capacity above Salmon Falls to at least 5 billion cubic feet. With this storage and full development of available head, at least 30,000 horsepower could be produced for 60 per cent of the time.

Because this river has been developed by and is largely controlled by a single corporation, it has not been extensively studied by this Commission.

SARANAC RIVER

Draining the Saranac Lakes, this river flows northeasterly into Lake Champlain at Plattsburg. The area of the watershed is 613 square miles, the mean annual rainfall about 35 inches, and the run-off 16.5 inches. A detailed survey of this river was made in 1913; results have been published in pamphlet form.

The only practical storage site is the basin lying immediately above the village of Saranac Lake, including Lake Flower, Oseetah Lake and surrounding swamps, Lower Saranac Lake and Middle Saranac Lake. The proposed reservoir would flood Oseetah Lake to a depth of 17 feet, Lower Saranac 10 feet, and Middle Saranac 8 feet. With a draft of only 10 feet, the effective capacity would be 4 billion cubic feet. This storage would be sufficient to increase the minimum flow at Plattsburg from 150 to 405 second-feet, while the flow available for 60 per cent of the time would be increased from 400 to 615 second-feet. Navigation in the Saranac Lakes would also be greatly benefited.

The Saranac River from Lake Flower to Lake Champlain has a total fall of 1,430 feet, nearly 80 per cent of which can be economically developed. The total amount of head developed at present is 485 feet, and the present wheel capacity is 25,050 horsepower, but of this installation only about 18,000 horsepower can be operated at full capacity for 60 per cent of the time. It is estimated that with the proposed regulation and full development the continuous power output would be at least 36,000 horsepower, and that for 60 per cent of the time about 51,000 horsepower would be available.

DETAILS OF STORAGE AND POWER

Storage:

4.0 b.c.f. of storage at Saranac Lake, regulated for Tefft Pond.

Power:

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Plattsburg	5,610	2,837	8,447
Morrisonville	300	187	487
Cadyville	9,240	6,635	15,875
Saranac	75	465	540
Union Falls	1,425	517	1,942

Location	Power available with present installation and present flow	Undeveloped power	Total power available
Franklin Falls	1,158	449	1,607
Saranac Lake	165	70	235
High Falls		11,440	11,440
Redford		1,670	1,670
Tefft Pond		6,670	6,670
Shell Rock Rapids		1,020	1,020
Pyramid Rapids		1,020	1,020
Total	17,973	32,980	50,953

SUSQUEHANNA RIVER

This river drains the south central part of the State, and, flowing southerly across the States of Pennsylvania and Maryland, empties into Chesapeake Bay. Including the Chemung River, which flows into the Susquehanna about eight miles south of the State line, the drainage area at the junction of the two rivers is 7,463 square miles. Of this area about 6,267 square miles lies within the State of New York. The mean annual rainfall is about 37 inches, and the run-off about 19 inches.

From Otsego Lake to the State line the Susquehanna has a fall of about 434 feet, quite uniformly distributed throughout the length of the river. Owing to this lack of concentrated head and to the fact that the valley is highly developed agriculturally and industrially, while railroads parallel the shores of the river, no large power developments seem possible within permissible limits of cost. This condition is also characteristic of the Chemung River and its principal tributaries within the State.

The most attractive reservoir site lies between Colliersville and Otsego Lake, on the headwaters of the Susquehanna. By damming the river at a point about one mile above Colliersville and flooding the valley to the present elevation of Otsego Lake, a storage capacity of about 7.5 billion cubic feet could be obtained, and by increasing the height of the dam so as to flood Otsego Lake to a depth of six feet, the capacity of the reservoir could be increased to 10 billion cubic feet. The dam, however, would be an expensive structure and property damages would be very

heavy. The project does not appear feasible for power development in New York State, but in connection with the water powers located in the State of Pennsylvania it might become practicable. The reservoir would also have a material value in flood prevention, which should be considered along with its value for power development. The regulation of this stream, however, is a matter for interstate action, and it should be taken up in co-operation with the Pennsylvania authorities.

The present power development of this watershed consists of a large number of small plants used by local mills and factories. The aggregate wheel installation is about 14,800 horsepower. It is estimated that perhaps 10,000 additional horsepower might be made available at undeveloped power sites and by re-design of existing plants.

BARGE CANAL POWERS

In connection with the Barge Canal, the State has constructed dams and reservoirs at various points and thereby has created a considerable amount of water power. The power available at many existing plants has also been materially increased by the stored waters necessary for navigation purposes. It is estimated by the State Engineer and Surveyor that the power thus made available would amount to about 40,830 horsepower, as indicated below. This figure includes only the power incidental to canal operation, assuming a traffic of 10 million tons per annum. Authority to provide for the full development of the power possibilities at points where head is created by canal structures would materially increase this item.

Details of Canal Power

	Horsepower
Hudson River (Lock 1).....	3,990
Mohawk River	15,543
Oswego River	15,852
Seneca River	250
Lockport	4,627
Rochester	568
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Total	40,830
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SUMMARY BY WATERSHEDS

River System	Power available with present installation and present flow	Undeveloped power	Total power available
Allegheny	2,300	2,500	4,800
Ausable	5,255	27,705	32,960
Black	89,430	159,010	248,440
Chateaugay	5,500	8,000	13,500
Delaware	3,400	40,000	43,400
Genesee	33,450	64,830	98,280
Grass	3,185	27,355	30,540
Hudson	199,659	319,101	518,760
Lake Champlain (minor streams)	17,000	4,000	21,000
Lake Erie (minor streams)	4,500	3,700	8,200
Lake Ontario (minor streams)	18,000	4,000	22,000
Mohawk	78,000	50,000	128,000
Niagara (20,000 second- feet)	265,000	275,000	540,000
Oswegatchie	24,738	58,098	82,836
Oswego	58,600	25,198	83,798
Raquette	30,540	139,260	169,800
St. Lawrence	86,000	564,000	650,000
St. Regis	4,187	63,386	67,573
Salmon (Franklin Co.)	5,000	11,000	16,000
Salmon (Oswego Co.)	15,000	15,000	30,000
Saranac	17,973	32,980	50,953
Susquehanna	14,800	10,000	24,800
Barge Canal*		40,830	40,830
Total	981,517	1,944,953	2,926,470

*Estimated by State Engineer and Surveyor.

Time Required for Development

The time required for the construction of the various reservoirs will depend on the physical conditions at their respective dam sites, as well as upon the economic factors involved. It is estimated that the Sacandaga and Portage reservoirs could be constructed in from three to five years; the Black River reservoirs in from one to three years, and most of the other Adirondack reservoirs in from two to three years.

The capacity of some of the existing reservoirs, however, could be slightly increased within a few months by placing flashboards on the dams, and by making other minor changes. The capacity of the Stillwater reservoir on the Beaver River, for example, could be increased by about 400 million cubic feet by placing 36-inch flashboards on the dam, and by deepening the outlet of Fourth Lake by 4 feet the capacity of the Old Forge reservoirs could be increased by perhaps 300 million cubic feet, effective only during the winter months. Twelve-inch flashboards on the Cranberry Lake dam would provide about 500 million cubic feet of additional storage. About 600 million cubic feet could be provided at Indian Lake by means of 36-inch flashboards. Pending the development of power at the Barge Canal dams at Crescent and Visscher Ferry on the Mohawk River, about 1 billion cubic feet of water could be withdrawn from the ponds back of these dams after the close of the navigation season. The Raquette Pond reservoir on the Raquette River having a capacity of from 1.0 to 1.25 billion cubic feet could be completed within perhaps one year. All these estimates, however, consider physical conditions only; legal complications have been entirely disregarded.

It should, of course, be understood that the vast amount of undeveloped power available in the State cannot be at once developed and placed in service. The regulation of the streams and the development of power must proceed in step with the demands of industry. Owing to the fact that most of the rivers require the construction of two or more reservoirs for complete regulation, such progressive development can readily be accomplished. The development of storage would; therefore, proceed gradually, starting with the cheapest or most readily available storage site, and continuing step by step with the more expensive projects, until the demand for power should require the complete

development of all available storage. The topography of a few of the rivers, however, is such that a high degree of regulation would be provided by a single large reservoir. It is fortunate that the rivers so situated lie close to industrial centers where a large amount of additional power could be most readily absorbed.

The Genesee River, for example, would be regulated to a high degree by the Portage reservoir, and, as it would require from three to five years to complete this reservoir and to develop the power at Portage Falls, it is probable that by that time the entire amount of power produced would be needed by the industries in Rochester and vicinity. The Sacandaga reservoir on the Hudson River would also make available a large increase in power, which would be entirely utilized in the Hudson Valley. The smaller and more remote streams would naturally be developed more slowly.

Water Power Owned by the State

By virtue of the ownership of lands in the Adirondack and Catskill Forest Preserves, the ownership of the beds of international boundary streams and the construction of the Barge Canal, the State has become possessed of an interest in a vast amount of water power. This interest varies all the way from such control as might prevent the development of the power by private interests without the consent or approval of the State, up to the full ownership of the fee of the bed and banks of the stream where the fall occurs.

The water power occurring on lands owned by the State in the Forest Preserve is the property of the State by virtue of riparian ownership and, therefore, barring the restrictions of the State Constitution on the use of forest lands, it may be developed, leased or disposed of on the same basis as the water power rights owned by individuals. On the international boundary streams the claim of the State is based upon its acknowledged ownership of the beds of these streams and is subject to Federal control of navigation and national defense.

In course of the construction of the Barge Canal the State has acquired certain power rights and by building dams and reservoirs for navigation has created other valuable power sites. The ownership of the power thus acquired and created apparently rests entirely in the State by virtue of riparian ownership.

Details of State-owned Powers

	Horsepower
International Boundary Streams:	
Niagara River (diversion of 20,000 sec.-ft.)	275,000
St. Lawrence River	564,000
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Total	839,000
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Riparian Ownership:	
Ausable River	1,500
Beaver River	3,600
Genesee River	36,800
Hudson River	60,000
Raquette River	10,000
Saranac River	1,500
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Total	113,400
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Barge Canal	40,800
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Grand total	993,200
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There will also be a considerable amount of power, which from the viewpoint of economy should be developed in connection with storage reservoir dams at various points. If these dams are built and owned by the State, it would probably be most satisfactory for the State to acquire the necessary riparian rights and to develop such power in the same manner as may be provided for the development of power on State lands. As the amount of power which might properly be so developed will depend somewhat on future legislation, no attempt has been made to include such power in the above table of State-owned powers.

Lands Required in Forest Preserve

Previous to the enactment of the Burd amendment to the State Constitution in 1913, the construction of storage reservoirs on State lands was prohibited. By this amendment the flooding of not more than 3 per cent of the Forest Preserve lands for water storage purposes is permitted. No provision, however, has yet

been made for the development of water power on State lands. Further amendment to the Constitution will, therefore, be necessary before the State can realize the full benefit of its water power holdings.

Only a trifling area of State land will be required for either water storage or power development. The following table indicates the approximate area of State land lying within each of the most practicable reservoir basins in the Adirondack Forest Preserve. It is here seen that of the total State holdings of approximately 2,000,000 acres, less than 31,000 acres, 1.7 per cent, will be required for practically complete development of the water storage possibilities of the Adirondack region. The use of these lands, together with authority to construct transmission lines over State lands would make it possible for the State to completely utilize its latent water power resources.

State Land Required for Water Storage

River	Reservoir	Area of State land
Ausable	Cherry Patch Pond..	352 acres
	Indian Face	None
Black	Beaver Lake	100 acres
	Forestport	100 acres
	Higley Mountain . . .	2,700 acres
	Lake Lila	None
	Otter Lake	1,000 acres
	Panther Mountain ..	None
	Stillwater	1,500 acres
Chateaugay	Chateaugay Lakes . . .	None
Grass	Clare	None
	Copper Rock Falls...	None
Hudson	Cheney Pond	840 acres
	Essex Chain	165 acres
	Harris Lake	100 acres
	Indian Lake	4,080 acres
	Piseco Lake	5,830 acres
	Lake Pleasant	1,320 acres
	Sacandaga	*31 acres
	Sanford Lake	None
	Schroon Falls	100 acres

* Acquired by mortgage foreclosure.

State Land Required for Water Storage — Continued

River	Reservoir	Area of State land
Oswegatchie	Newton Falls	None
	Harrisville	None
Raquette	Oxbow	6,700 acres
	Raquette Pond	None
	Stark	None
St. Regis	Brandon	100 acres
	Everton	None
	Five Mile	None
Salmon	Titusville	1,200 acres
Saranac	Saranac Lake	4,700 acres
Total		<u>30,918 acres</u>

APPLICATIONS BEFORE INTERNATIONAL JOINT COMMISSION

Two applications were made to the International Joint Commission for permission to construct works on the St. Lawrence river for the purpose of developing power. One of these applications was made by the New York & Ontario Power Company, who desire to construct a dam and power house in the vicinity of Waddington on the south branch of the St. Lawrence river, known as Little river. The other application was made by the St. Lawrence River Power Company, who asked for permission to construct and maintain a submerged weir in the south channel of the St. Lawrence river near the mouth of the company's power canal at Massena.

The Conservation Commission appeared before the International Joint Commission for the purpose of protecting its rights in the ownership of the bed of the river. Details of the application and the briefs filed by the Conservation Commission follow:

APPLICATION OF THE NEW YORK & ONTARIO POWER COMPANY FOR PERMISSION TO CONSTRUCT CERTAIN WORKS ON LITTLE RIVER AT WADDINGTON, N. Y.

The New York & Ontario Power Company on April 24, 1918, applied to the International Joint Commission for permission to construct certain works for the purpose of developing the power which it claimed to own in the vicinity of Waddington on the south branch of the St. Lawrence River, known as Little River.

**Little River at Waddington, N. Y.
Dam of the New York & Ontario Power Co.**

Little River at Waddington, N. Y.
Remains of old lock built in compliance with terms of grant of 1806.

Little River at Waddington, N. Y.
Old timber dam of the New York & Ontario Power Co.

The application asked for the approval of the following:

(a) The construction of a dam and power house near the northeastern end of Ogden island (or Isle-au-Rapide Plat) completely closing Little river.

(b) Upon the construction of this dam, to remove the present old dam.

(c) Or in lieu of this to repair the old dam and construct a new power house in it.

(d) To improve the channel of Little river both above and below the works by the removal of all artificial obstructions such as bridges, piers, silt, etc., and to make such further excavation as may be necessary to enable the petitioner to use the natural flow of said stream at the highest degree of commercial efficiency.

(e) Permission to construct a submerged weir in the main river opposite Lock 24 of the Morrisburg canal, for the purpose of contracting the channel and raising the river level above.

(f) Permission to construct an embankment to connect the easterly extremity of Ogden island and Canada island, for the purpose of diverting the whole flow of the main stream through the channel between Canada island and the Canadian main shore, thus raising the level at this place, and by backwater, restoring to the rapids the depths lost by the diversion through Little river above. This embankment will also protect the tail race of the petitioner's proposed new power plant and improve the head at said plant.

(g) Permit the diversion through Little river and the applicant's power canal of such additional water as may be required to maintain a discharge of 30,000 c.f.s. at all times, when such additional diversion does not detrimentally affect navigation.

The New York & Ontario Power Company was incorporated April 18, 1906, to furnish light and power to municipalities and industries in northern New York. It has acquired all the rights and privileges originally held by David A. Ogden and his associates, which were based upon the grants of the Legislature quoted below.

On April 1, 1808, the New York State Legislature by chapter 121 of the laws of 1808 conferred upon David A. Ogden and Thomas L. Ogden and their associates the right to construct a dam and lock from the mainland to Ogden Island, and to use water impounded for the generation of power for any commercial purpose. The powers conferred under this act were limited to a term of 75 years. On April 17, 1826, another act (chapter 280, laws 1826) was proposed in which it was set forth that:

"David A. Ogden of the county of St. Lawrence, being proprietor of both sides of the branch of the river St. Lawrence, in the town of Madrid (Waddington), and across which river he has erected a dam and locks in pursuance of an Act passed April 1st, 1808, shall and he is hereby declared to be vested with all the rights of the people of this State to the lands situated below

the said dam, and which by reason thereof has been rendered susceptible to improvement, and extending down the branch of the said river from the said dam to the navigable waters thereof, to have and to hold to the said David A. Ogden, his heirs and assigns forever."

Hearings were held before the International Joint Commission at Ottawa on October 1st and 3rd, 1918. The State of New York was represented by the Counsel to the Conservation Commission and the Division Engineer. An objection to granting this application was presented, as set forth in statement entitled "Statement in Response on Behalf of the State of New York," and quoted below:

"INTERNATIONAL JOINT COMMISSION

In the Matter of the Application of the New York and Ontario Power Company for Approval of its Plans to Reconstruct, Repair and Improve the Dam, Hydraulic Structures and Water Power Property at Waddington-on-the-St. Lawrence, New York.

To the Honorable the International Joint Commission, WASHINGTON, D. C., AND OTTAWA, CANADA:

In reply to the application of the New York and Ontario Power Company for approval of its plans to reconstruct and repair its dam and other properties situate at Waddington-on-the-St. Lawrence, in the State of New York, the undersigned as Counsel for the State of New York, respectfully submits:

(1) That the control of navigable waters within the State of New York, whether interior or boundary waters, is one of the sovereign powers of the State subject only to the paramount right of Congress to control same with respect to navigation.

(2) That the State of New York is the owner of the fee of the land constituting the beds of boundary streams lying within the boundary lines of the State, except in cases where the same has been specifically granted.

(3) That the 'Little River' referred to in the petition of the applicant herein, from its commencement at the westerly end of Ogden Island to its termination at the easterly end of said island, lies wholly within the State of New York, but constitutes a part of the boundary waters between the State of New York and the Dominion of Canada; that the said Little River is a navigable stream which in the past has been developed in the interests of navigation and is capable of further development for the promotion and encouragement of such interests.

(4) That the rights and privileges granted to Joshua Waddington, David A. and Thomas L. Ogden, pursuant to Chapter 121, Laws of 1806, have expired by express limitation in the said act contained and that any rights and privileges alleged to have been acquired by the applicant under and pursuant to said statute have ceased and determined.

(5) That unless the consent of the State of New York shall first be obtained, the right of the applicant, if any it shall have, to the use of the waters of said Little River is limited to the use of the natural flow of said river.

(6) That the erection of a dam across the Little River between the American shore and Ogden Island at a point marked 'A' on a map attached to the application and filed therewith, and the construction of an embankment between the eastern extremity of Ogden Island and Canada Island, and the filling in of deeper portions of the channel opposite Lock No. 24, would constitute an unlawful interference with the navigation of the St. Lawrence River.

(7) That the State of New York is unable to agree to the proposed construction work set forth in the petition of the applicant, for the following reasons:

(a) That such construction work will constitute an unlawful interference on the part of the applicant with the navigation of the St. Lawrence River.

(b) That it will permit the applicant to divert and use a greater flow of water through the Little River than the normal or natural flow of the said Little River without first having obtained the permission of the State of New York so to do.

Respectfully submitted,

MARSHALL MOLEAN,

*Special Deputy Attorney-General of
Counsel for State of N. Y."*

The Little River, so-called, is that portion of the St. Lawrence River which flows to the south side of Ogden Island, which is located about nine miles below the city of Ogdensburg. It has its beginning, known as "the intake," at the western end of Ogden Island and at what is known as Leishman Point on the United States mainland. The main channel of the St. Lawrence River flows to the north of Ogden Island and the particular stream opposite the island is known as the Rapide Plat. The fall through the rapids is about twelve feet. Downstream navigation is carried on through the rapids but all of the upstream traffic is through the Morrisburg canal on the Canadian side. At low stages, the canal is also used for downbound traffic.

After the passage of the act of 1808, a dam was constructed across the Little River at a point about 12,000 feet downstream from the intake. This dam is located in the present village of Waddington. In years gone by there have been many mills, factories or other power using plants located near, and utilizing the power created by this dam. All except a small electric plant are in disuse at present and all are in poor condition, while only the ruins of some remain. The dam is an old timber-crib structure about fourteen feet high which has been repaired in various ways and at present has a considerable amount of wood in its makeup. It is in very bad condition and a large amount of water leaks

through the stonework. A very small amount of power is utilized from the dam at present.

About 800 feet above the dam a roadway has been built across Little River connecting Ogden Island with the mainland. This roadway is constructed of boulders covered over with a roadbed of earth. There are two short span bridges in the roadway which provide passageway for most of the present flow of Little River, the remainder leaking between the boulders of the roadway. At standard low water (Elevation 225.00 at Leishman Point), the drop in water surface between the upper and lower sides of the roadway is about 1.6 feet indicating that the amount of water flowing in the Little River under present conditions is controlled primarily by the amount that can pass through the roadway.

In connection with part (b) of paragraph 7 of the "Statement in Response on Behalf of the State of New York," 'That it will permit the applicant to divert and use a greater flow of water through the Little River than the normal or natural flow to the said Little River without first having obtained the permission of the State of New York so to do,' it was requested at the hearing that the Conservation Commission should be granted time to investigate the channel of Little River and make computations to determine what the probable natural flow of Little River was. It was further agreed that the New York and Ontario Power Company would cooperate with the Conservation Commission to the extent possible.

A survey was made between October 14th and October 26th to obtain the necessary field data upon which to make our computations. It consisted chiefly of obtaining cross sections of the Little River at various points and ascertaining, so far as possible, the character of the stream bed at these same points. Besides the cross sections themselves a good many random soundings were taken in certain portions of the river. The measurement of horizontal distances was made by stadia and the depth of water measured by means of sounding poles, and in the deeper portions by sounding line. The elevation of the Bench Mark on the Presbyterian Church at Waddington was taken as 272.88 and all our elevations are referred to that datum. The New York and Ontario Power Company cooperated in the field work and we are further indebted to them for much valuable information used in connection with our office studies.

Contrary to the testimony offered by the applicant at the hearing, we did not find any silting up of Little River at any point where such silting would cause any appreciable diminution of the free flow of Little River. Ledge rock is exposed over the bottom over wide areas. This rock is perfectly clean and free from deposits over its surface. Assuming that the causeway leading from the mainland to Ogden Island is removed, the flow of Little River is for all practical purposes controlled for any given stage of the St. Lawrence by the cross section of the stream between the dam and the road. We found that at the upper end of this reach near the causeway and, for a considerable distance below, the ledge rock was exposed over practically the entire bed of the river, and also cropped out on the south bank and that this rock is swept clean. This point is the controlling point, and the elevation of what may be called the lip of the spillway is about 218.0 in the center of the stream, whereas at the entrance of Little River near Leishman Point, the next highest point on a profile of the river bottom, the elevation is 213.4.

It was contended by the engineers of the New York and Ontario Power Company that the minimum flow of Little River was about 15,000 cubic feet per second. According to our estimate the minimum flow corresponding to a flow of 180,000 cubic feet per second in the St. Lawrence River would be about 4,700 cubic feet per second. The following table shows the estimated natural flows in Little River corresponding to various discharges of the main river, as computed by the New York and Ontario Power Company and by the Conservation Commission:

PERCENTAGE OF AVERAGE YEAR	Main river total flow	LITTLE RIVER COMPUTED NATURAL FLOW	
		New York & Ontario Power Co.	Conservation Commission
	<i>c. f. s.</i>	<i>c. f. s.</i>	<i>c. f. s.</i>
Maximum.....	320,000	46,000	42,700
20 per cent.....	270,500	34,000	22,000
40 per cent.....	253,000	29,800	18,400
60 per cent.....	239,000	26,600	15,700
80 per cent.....	223,000	23,200	12,600
100 per cent, minimum.....	180,000	15,000	4,700

In making these computations of the flow of Little River, the high point of rock existing just below the causeway was treated as a broad-crested weir, the formula used being $Q = 2.64 \text{ } lh^{1.5}$,

the cross section of the stream being divided up into short lengths. We believe that this formula gives flows somewhat in excess of the true flow for the existing conditions.

The results of the above studies have been sent to the International Joint Commission and the New York & Ontario Power Company. We have not been advised that any definite action has been taken in regard to this application by the International Joint Commission.

**APPLICATION OF THE ST. LAWRENCE RIVER POWER COMPANY
FOR PERMISSION TO CONSTRUCT REGULATING WORKS ON
THE ST. LAWRENCE RIVER AT MASSENA, N. Y.**

Under date of July 25, 1918, the St. Lawrence River Power Company applied to the International Joint Commission for permission to construct and maintain a submerged weir in the south channel of the St. Lawrence River near the mouth of the Company's power canal at Massena. It was represented to the Commission that serious interference had been experienced with the operation of the power plant during the months of January, February and March from ice plugging the south channel and almost entirely cutting off the flow of water into the power canal; that the power generated was used mainly in the production of aluminum by the Aluminum Company of America (the Power Company being a subsidiary of the Aluminum Company); that the demand on this company to supply aluminum was most urgent and insistent and that practically this entire output was taken by the United States and Allied Governments for military purposes in prosecuting the war; that if the formation of the jams on the south channel could be prevented that the annual output could be increased by over six million pounds. The company stated that the effect of the construction of the proposed weir would be to improve winter conditions without affecting materially the diversion of water, navigation and water levels of the boundary waters on the Canadian side of the St. Lawrence. The company also stated that their plans had received the approval of the Secretary of War under date of September 10, 1917, subject to the approval of the Commission.

The company prior to the date of its application to the International Joint Commission applied to the Secretary of War for three things:

St. Lawrence River near Massena, N. Y.
Weir constructed by the St. Lawrence River Power Co. in the South Sault channel.

St. Lawrence River.
Wing dam and ice booms constructed by the St. Lawrence River Power
Company to divert ice down the North Sault channel.

1. Permission to dredge the South Sault channel to a width of 150 feet and depth of twenty feet at Dodge's shoal which is about 4,000 feet above the intake of the power canal.

2. Permission to construct a removable ice boom supported by permanent stone filled cribs between Delaney Island and Talcott's Point on the south shore of the river at Dodge's shoal, with a wing dam extending from the mainland above Talcott's Point to the upstream margin of the dredged channel for the purpose of diverting the flow of the water and ice across four ice diverting channels which would connect deep water with the channel to be dredged.

3. Permission to construct the submerged weir.

A hearing was held before the International Joint Commission on August 29, 1918. The Counsel and Division Engineer of the Conservation Commission attended this hearing in behalf of the State of New York. The following "Statement in Response" was filed with the International Joint Commission at the said hearing:

"To The Honorable The International Joint Commission, WASHINGTON, D. C., AND OTTAWA, CANADA:

In reply to the application of the St. Lawrence River Power Company for the approval by the International Joint Commission of the permit set forth in its application to erect a submerged weir across the South Sault Channel between the main shore and Long Sault Island, and as a statement in response to said application, the undersigned as Counsel for the State of New York respectfully submits:

(1) The Applicant Company is a corporation incorporated under and pursuant to the Laws of the State of New York, and is operating its plant at Massena, New York, pursuant to a charter granted to the St. Lawrence River Power Company, which said charter constitutes Chapter 484 of the Session Laws of 1896.

(2) That the Aluminum Smelting Plant at Massena, New York, the Power Canal and the site of the proposed weir lie wholly within the boundaries of the State of New York.

(3) That the South Sault Channel from its commencement at the westerly end of the Long Sault Island to the point where it again meets the main channel of the St. Lawrence River at the easterly end of Long Sault Island lies wholly within the State of New York and the bed of the stream underlying said channel is owned by the State of New York in fee.

(4) Control of the navigable waters within the State of New York, whether interior or boundary waters, is one of the sovereign powers of the State subject only to the paramount right of Congress to control the same with respect to navigation.

(5) That the South Sault Channel is a navigable stream, navigable in fact in the past and capable in the future of further development for the promotion and further encouragement of navigation.

(6) That the construction of a submerged weir or dam pursuant to the plans filed by the applicant would in fact destroy the navigation of the South Sault Channel and prevent any further development or improvement of the said channel in the future in the interest of improved navigation.

(7) That the charter under which the applicant is operating its business, namely, Chapter 484 of the Laws of 1896, specifically prohibits any interference with the navigation of the St. Lawrence River.

(8) That the applicant has failed and neglected to obtain from the State of New York permission to erect the said submerged weir or dam, although required by law so to do by Section 22 of the Conservation Law, constituting Chapter 65 of Consolidated Laws.

(9) That the charter granted to the St. Lawrence River Power Company of Massena (Chapter 484, Laws of 1896) confers no rights upon the applicant with respect to the bed of the South Sault Channel, other than 'to construct, maintain and operate a canal or canals from the St. Lawrence River, commencing at a point or points between the westerly line of what is known as the Dan Talcott Farm, and the easterly line of the farm now occupied by the widow of William Dodge, upon the southerly bank of the St. Lawrence River, and extending to, through and over the lands intervening between said points and the Grass River' and to terminate upon the northerly side of the Grass River, and that the said charter gives no rights in and to the navigable waters of the St. Lawrence River other than to conduct from the St. Lawrence River water sufficient for purposes of developing the power, for all purposes mentioned in the said charter and to discharge the same into the Grass River, but not to interfere with navigation of the St. Lawrence River.

(10) The State of New York is unable to agree to the construction of the proposed submerged weir or dam for the following reasons:

(a) That such construction would be an invasion of the rights of the citizens of the State of New York in and to the navigable waters of the St. Lawrence River and more particularly of the South Sault Channel thereof.

(b) That the construction would necessitate the taking of a portion of the bed of the river belonging to the State of New York.

Respectfully submitted,

MARSHALL MOLEAN,

*Special Deputy Attorney-General, of
Counsel for State of New York."*

The International Joint Commission in its opinion stated that all three items should have been submitted to it for approval, as the evidence offered tended to show that the dredging alone would have an effect on the flow of the boundary waters. The opinion written by Mr. Mignault further stated:

"Under normal conditions and under the evidence submitted — without the stress of the emergency which confronted the Commission when application was made to it to issue an order of approval, which had to be issued at once to be of any use for the coming winter — it would have been the duty of the Commission under the Treaty to consider the whole work as one project.

and to have required the application to be amended accordingly. The attention of the applicant was several times during the hearing called to the requirements of Article III of the Treaty with respect to this dredging, and the Commission is of the opinion, in view of the prohibition of this article, that unless some action be taken by the applicant to meet these requirements, the dredging work cannot be considered to have been done lawfully or in accordance with this provision of the Waterways Treaty, because it admittedly affects the 'level' and 'flow' of boundary waters.

"It may perhaps be further remarked that those in authority in either of the countries should not lightly take upon themselves the responsibility of determining whether a proposed use, obstruction or diversion of boundary waters will or will not affect the level or flow of such waters on the other side. The High Contracting Parties, in the absence of a special agreement between them in respect thereto, have created a tribunal before which all such questions should be brought, and it would not be conducive to that spirit of fairness and of mutual co-operation with which the Treaty should be carried out, for one side to determine in an *ex parte* manner, and without reference to the other side, questions involving the use, obstruction or diversion of these boundary waters now prohibited by the Treaty except as therein provided."

The decision of the Commission, which was dated September 14, 1918, is as follows:

"It is hereby ordered, as an interim measure, that the construction of the said weir and its maintenance until the expiration of the term of five years from the date hereof, or until the termination of the present war, is hereby approved upon the following conditions:

(1) That at the expiration of said period of five years, or upon the termination of the present war, whichever shall last occur, said weir shall be removed by the applicant; reserving, however, to the applicant or any other interested party the right to apply to the Commission at least one year before the expiration of the said period for a further continuance of the said weir, and on such application the Commission may approve of such continuance on such terms and conditions as it may deem appropriate and equitable for the protection of the rights and interests of the people on either side of the line in accordance with Article VIII of the Treaty of 1909.

(2) That the said weir shall be constructed and maintained in accordance with the plans mentioned and under all the terms and conditions set forth in the paragraphs numbered from 1 to 11, both inclusive, in the permit therefor granted by the Secretary of War dated September 10, 1917, so far as same are applicable.

(3) That for the purpose of protecting the rights, property and interests on either side of the boundary from any injurious effect resulting from the construction and maintenance of said weir the Commission will, during the term of its approval herein, retain jurisdiction over the subject matter of said application, and may make such further order or orders in the premises as may be necessary.

Provided, that in making the foregoing order the Commission shall not be deemed to have considered nor passed upon any question pertaining to the right of the applicant to divert water from the St. Lawrence river. Dated at New York, N. Y., September 14, 1918."

Mr. Mignault in his opinion further states "with respect to the Statement in Response filed by the State of New York, and its claim that the construction of the weir would be an invasion of the rights of its citizens in and to the navigable waters of the St. Lawrence river and of its rights of ownership of the bed of the river, it will be sufficient to say that no such rights are in any way affected by the order of approval."

The works constructed by the Power Company were inspected by engineers of the Commission on January 8, 1918. Unfortunately, on the day when the inspection was made there was no ice moving in the river so that the effect the works had in the way of diverting the ice from the intake was not observed. The weir has been completed with the exception of placing the concrete cap, and work was being suspended for the winter. It should be noted that the level of the water in the canal and forebay has been increased by six feet by reason of the construction of the weir.

The Commission believes that the St. Lawrence River Power Company has invaded and used the property of the State of New York without its consent, and that the company should pay the State for such use. The Commission believes that the Attorney-General should proceed against the company for recovery of damages as a yearly rental or both.

RIVER IMPROVEMENT

Canaseraga Creek Improvement. Maintenance operations consisting chiefly of the construction of pile and brush bank protection and the erection of dikes to prevent the overflow of flood waters, were carried on until July, 1918, when lack of funds caused their discontinuance. This work was carried out under article 7 of the Conservation Law, under which the Commission acts on the petition of the interested parties, as their agent throughout the proceeding. The law provides that the cost of the work shall be met by the issuance of bonds which, together with interest and other charges, are to be paid by levies of taxes upon the land benefited in proportion to the benefits. The maintenance is also to be done by the Commission and paid for by taxes levied in the same way. The Commission completed the work and made the determination of benefits as required by the statute, and the

taxes were duly levied. The property owners, however, elected to review the determination of the Commission by certiorari proceedings. The property was sold for the taxes in 1917, and was bought in by the bond-holders. This furnished sufficient funds to carry on maintenance and pay the accrued interest and bond falling due. In 1918 the property was again advertised for sale, but there were no bidders at this sale. Consequently, there were no funds for maintenance work. The Commission is using every effort to bring this matter to a final determination.

TABULATION OF EXPENDITURES

FROM CANASERAGA CREEK IMPROVEMENT FUND

	Oct. 17, 1910 June 30, 1917	July 1, 1917 June 30, 1918	Total
Engineering:			
Salaries	\$23,477 26	.....	\$23,477 26
Expenses	6,475 47	.....	6,475 47
Construction:			
Stephens Contract	84,198 33	.....	84,198 33
Completion of Contract.....	46,918 46	.....	46,918 46
Right of Way:			
Land Committee (salary).....	2,782 00	.....	2,782 00
Land Committee (expenses)...	1,073 70	.....	1,073 70
Legal and Miscellaneous.....	6,362 31	.....	6,362 31
Considerations	5,968 81	.....	5,968 81
Legal:			
Services	3,016 00	.....	3,016 00
Expenses	320 29	.....	320 29
Miscellaneous	2,010 15	.....	2,010 15
Miscellaneous	12 75	.....	12 75
Interest on Bonds:			
Cash Payments	45,000 00	\$9,250 00	54,250 00
Certificate of Indebtedness.....	19,500 00	4,750 00	24,250 00
Interest on Certificate:			
Cash Payments	350 00	3,385 17	3,735 17
Certificate of Indebtedness.....	1,725 00	1,293 75	3,018 75
Retirement of Bonds:			
Cash Payments .....	.....	.....	5,000 00
Certificate of Indebtedness.....	10,000 00	5,000 00	15,000 00
Retirement of Certificate:			
Cash Payment .....	.....	.....	21,000 00
Assessment of Benefits:			
Assessment Committee	1,654 74	.....	1,654 74
General Expenses	1,570 53	645 90	2,216 43
Maintenance and operation.....	19,318 19	8,487 29	27,805 48
Totals	<u>\$281,733 99</u>	<u>\$32,812 11</u>	<u>\$340,546 10</u>

STATEMENT

Proceeds Sale of Bonds, Accrued Interest and Other Credits..	\$230,982 79
Sale of Certificate of Indebtedness.....	88,818 75
Proceeds Tax Sale 1917.....	25,009 88
	<hr/>
	\$344,811 42
Expenditures as above.....	340,546 10
	<hr/>
Balance, June 30, 1918.....	\$4,265 32
	<hr/> <hr/>

OUTSTANDING INDEBTEDNESS, JUNE 30, 1918

Bonds (5% interest).....	\$180,000 00
Certificates (5% interest).....	62,811 75
Certificates (6% interest).....	5,000 00
	<hr/>
	\$247,811 75
	<hr/> <hr/>

DRAINAGE**PENDLETON DRAINAGE PROJECT**

A petition praying for the drainage of swamp lands in the towns of Pendleton and Lockport, Niagara county, was filed in the office of the Commission on August 3, 1917. According to our custom a reconnaissance of these lands was made by one of our engineers, who reported that the drainage project was entirely feasible. Accordingly a detailed survey was made, plans and estimates of cost prepared and filed in accordance with the provisions of article 8 of the Conservation Law. After advertisement a hearing was held on October 31, 1918 at Pendelton Center. Although the owners of more than 50 per cent of the property affected had signed the petition, little or no sentiment in favor of carrying out this project developed at the hearing, which was adjourned with the understanding that, if the owners of 75 per cent of the land affected desired to proceed with the work, the Commission would take action. The Engineer's report of this project follows:

ENGINEER'S REPORT**Location**

Between the south line of the city of Lockport and Pendelton Center Station on the International Railway and extending from the Barge Canal to the Niagara Falls and Lockport branch of the New York Central Railroad, there are approximately 4,200 acres of comparatively flat and poorly drained

agricultural lands. The general slope of this area is in a southeasterly direction and the natural outlet for water falling thereon is the Barge Canal. These lands form an independent drainage area, as the lands which lie to the north drain into Eighteen Mile Creek, those to the west into Bull Creek and those to the south into Tonawanda Creek. There are numerous highways within this area, which run generally in an easterly and westerly or northerly and southerly direction. All of these highways, with one exception, are town dirt roads and are in poor condition much of the time. High water in the spring and lack of drainage keep them badly broken up until nearly summer.

Present Conditions

Practically all of the land in this district, except that on the ridges needs drainage to some extent and must have it before the soil can be worked to its best advantage. The soils are fairly rich and when well drained are capable of producing excellent crops. Little success is attained at the present time with the cultivated crops, except upon the ridges and better drained portions

The following extracts from the United States Soil Survey report of Niagara County are worthy of consideration:

"There is great need of improving the drainage conditions of all the Clyde soils, some of the Dunkirk soils and of the muck areas. The first essential is more large open ditches for outlets. These must be constructed by co-operative arrangement among farmers * * *. The chief difficulty is that many farmers do not understand the value of drainage and consequently oppose the movement * * *. Better drainage would lengthen the crop season, warm and aerate the soil and enable plants much better to resist drought, would improve the soil tilth and reduce heaving, and make possible the production of crops now grown with indifferent success on many of the heavier soils. The present system of open drains would be improved by the use of tile drains in all the laterals and many of the smaller mains. These may be readily manufactured from the subsoil of the Dunkirk clay and Clyde clay. Tile would drain the land much deeper and would greatly facilitate cultural operations and harvesting * * *. Tile should be laid below two feet to avoid displacement by the frost."

"Referring to the Dunkirk clay, the drainage of this soil is deficient. It is usually plowed too shallow, and is consequently dense and poorly aerated. As a result of these conditions, the average yield is much below what it might be. The greatest improvement to this soil will result from thorough drainage."

"The Clyde clay is slightly heavier and occupies depressions. These are generally shallow and flat bottomed or saucer shaped. As a result of its position, natural drainage is very poor. Much of it is flooded in the spring and some of it remains in a semi-swampy condition and is still covered with timber. Owing to the lateness of its drying out in the spring, it is usually fall plowed for oats. If properly drained, it has been known to yield as high as 40 bushels of wheat, 70 bushels of oats and 75 bushels of corn per acre. In the north central states this soil has proven a very good sugar-beet soil."

If drainage conditions are improved, beans, corn, potatoes, etc., can be raised upon any portion of this area. During the past attempts have been made to obtain drainage, but the present appearances do not indicate that the resulting benefits have been far-reaching. The Ellis ditch, so called, which was constructed under the old Commission ditch law has provided satisfactory drainage for some of the area adjacent to its outlet. However, lack of suitable provision for the maintenance of such system of ditches has caused lands adjoining their upper ends to revert to former conditions. Many farms have no outlet or direct communication with channels which will carry away the waters falling upon the land. Most of such areas are cleared and attempts have been made, at one time or another, to produce growing crops upon them, but the rather dense character of the soil caused the water to remain upon the surface and destroyed whatever was planted. The wooded area does not contain much valuable timber and undoubtedly would be cleared if suitable drainage was provided. In many cases hedges grow along the fences and property lines, which might well be cut down, as this would increase the arable area. There are some orchards growing apples, peaches and pears, but the greater portion of the land is devoted to general farming purposes. During the late summer of 1917 a topographic survey of the lands in this district was made and maps prepared for the purpose of studying a proper system of drainage. These studies show that an area of about 3,450 acres can be drained into the Barge Canal. During the spring of 1918, surveys were made to define the property lines and for the purpose of estimating the excavation required for the various drainage channels.

The ditches have been located so as to provide a drainage outlet for every piece of property within the district at such a grade that each farm may be underdrained by tile.

Capacity of Ditches

Almost innumerable instances can be found where drainage improvements have been planned and constructed upon a scale entirely too small to secure efficient results, and where it should have been known in advance that the benefits resulting from a failure to provide insufficient capacities of channels and proper grades to secure adequate drainage would not be commensurate with the expenses incurred.

The above statement is made in anticipation of an argument which some property owners might present against having the ditches as deep as now proposed. Such ditches were designed to carry off without flooding the adjoining lands, an amount of water equivalent to one inch in depth over the entire area. In determining the amount of run-off to be expected from the given area, it is necessary to take into consideration:

1. The size of the watershed.
2. Its general topography.
3. Kind and condition of the soil.
4. Amount and intensity of the rainfall.

In regard to the effect that these various factors have upon the run-off, it may be said generally that the smaller the watershed the greater proportion of the rainfall will run off. In this particular case, the area under consideration being comparatively small, it is reasonable to expect a relatively large run-off, considering this feature alone. In regard to the topography, the flatter the area the slower will be the run-off and in this particular case the tendency will be to extend the period of run-off over a time somewhat exceeding the duration of the storm itself. The character and condition of the soil in its natural state is such that it will not absorb a great amount of water and is naturally favorable to a rapid run-off. The capacity of the soil for retaining water will be somewhat increased when it is put under cultivation and the rapidity of the run-off will be somewhat decreased by reason of more extensive cultivation. The principal factor to consider in determining the probable run-off is the amount and intensity, as

well as the frequency of the rainfall. A short storm of very great violence might produce much greater floods than more water would, falling during a greater length of time. The records of the Weather Bureau for this vicinity have been carefully examined during the period extending from 1906 to 1917 and the number of storms of 1-inch or over in 24 hours occurring during this 12-year period are as follows:

PLACE	NUMBER OF STORMS		
	One inch or over in 24 hours	Two inches or over in 24 hours	Three inches or over in 24 hours
Lockport.....	54	3	.....
Buffalo.....	55	.....	1
Brockport.....	45	4	.....

All things considered, it is not expected that the run-off will be greater than 50 per cent of the rainfall and the ditches have been designed to carry off water resulting from a storm of 2-inch falling within 24 hours. A storm of this size is not to be expected any more often than once in 3 or 4 years on the average. The size of the ditches is not alone dependent upon the flood capacity in this particular instance for the reason that the depth required for proper drainage is governed by the topography of the area. For practical reasons it is impossible and inadvisable to excavate a bottom width of less than 2 feet and side slopes of less than 45 degrees.

The excess capacity incident to providing proper drainage depth will be useful causing a quick run-off at the time of the spring break-up when the large amount of snow, which accumulates in this area, is melted. The grades are such that the ground water level will be quite low during the winter months and little or no trouble is anticipated from the formation of ice in the channels.

Engineering Features

The largest ditch in the proposed system will have a bottom width of about 6 feet and the other ditches vary from this size down to a bottom width of 2 feet. All side slopes are to be on a 1 to 1 slope. It is assumed that the excavating of the ditches will

be done by some sort of machinery designed for the purpose. As by far the larger part of the ditches have a bottom width of 2 feet, it is thought that the best size of machine for the work is one which will excavate a ditch of that size. It is then proposed to enlarge the ditch at the section where necessary. This allows the use of a comparatively small machine, which will be advantageous because of the limited space which is available on some of the proposed ditch lines.

The excavations will be almost entirely through clay. Sub-surface investigations show that the portion of the district east of the International Railway is probably all clay to a depth of 6 or 7 feet below the ground surface. Across the Burnett farm, west of the International Railway, borings showed gravel beneath clay at a depth of 3 or 4 feet, and in excavating the ditches some of the gravel would have to be removed. There is rock not far below the surface in this locality, but it is not believed that any of the ditch grades are low enough to touch it. Across the lands of Fred Rigerman and Robert Egelhoff there are several outcroppings of rock in the present ditch. Borings in this locality indicate that the rock consists of large boulders. However, some rock would have to be removed and allowance for a small quantity has been made in the estimate.

The water main supplying the city of Lockport follows the International Railway for the entire length of the drainage district and the proposed ditches cross it at three different points. As the top of this main is only about 2 feet above the bottom of the proposed ditches at the crossings, it may be easily lowered this amount without interruption of service.

Along the Barge Canal there is a high ridge and it will be necessary to reconstruct and lower two of the three present culverts, which it is proposed to use in the drainage system. The culvert entering the canal at the Hodgeville Road is large enough and the present elevation is low enough to provide the necessary drainage. Each of the culverts at Buttermilk Lake and on Thomas May's land will have to be enlarged and lowered. Several culverts are necessary through the various roads and the railroads, and numerous small wooden bridges will be constructed at convenient points in order that all farm lands may be accessible.

Following the determination of the general plan of the proposed drainage system, detailed preliminary estimates were made and the summary is given below. It is believed that the unit prices have been placed high enough for the present time. The price for excavation, the main item of cost, has been placed at what is believed to be outside figure. The summary of the estimate is as follows:

Preliminary Estimate of Cost

ITEM	Unit	Quantity	Unit price	Amount
Right of way.....	Acres.....	45	\$25 00	\$1,125
Clearing.....	Lump sum..	.....	.....	2,000
Excavation, earth.....	Cu. yd.....	80,000	40	32,000
Excavation, rock.....	Cu. yd.....	50	2 00	100
Concrete, second class.....	Cu. yd.....	65	15 00	975
Concrete, third class.....	Cu. yd.....	280	12 00	3,360
Reinforcing, mesh.....	Lbs.....	2,900	10	290
Reinforcing, bars.....	Lbs.....	1,900	10	190
Bridges, small type.....	Lump sum..	45	50 00	2,250
Bridges, large type.....	Lump sum..	7	120 00	840
Lowering water main.....	Lump sum..	.....	.....	500
Maintaining traffic.....	Lump sum..	.....	.....	500
Making assessment.....	Lump sum..	.....	.....	1,000
				\$45,130
Engineering and contingencies 15% of \$45,130.....				6,770
				\$51,900
Interest on \$58,000 during construction (10%).....				5,800
				\$57,700

Benefits

The benefits to result from the proposed drainage improvement are in the main of an agricultural nature. The property owners will, therefore, have to bear practically the entire cost of constructing the system. The only exception seems to be in the case of resulting improvement to roads, which will come from controlling the flood water. The proportion, which the towns owning the roads will be expected to bear, will be very small, probably not more than 2 per cent of the entire cost divided among three towns, in proportion to the amount of road benefit received by each.

AMENDMENT TO DRAINAGE LAW

In the course of the hearings held by the Commission in proceedings brought under Article VIII of the Conservation Law, known as the Drainage Article, it developed that this law was deficient in that it did not clearly make it possible for an owner of swamp lands to excavate ditches on adjoining lands when necessary and accomplish the drainage of his land. To remedy this deficiency the Commission requested the Legislature to enact Article VIII-A, which became a law on May 6, 1918, and reads as follows:

ARTICLE 8-A.**DRAINAGE OF AGRICULTURAL LANDS.****Section 495. Petition.**

496. Investigation by commission.

497. Notice of hearing.

498. Hearing; assessment of damages.

499. Court review of decision of commission.

500. Payment of damages; entry.

501. Use of drains.

§ 495. **Petition.** Any person or persons owning any swamp, bog, pond, meadow, or other low or wet agricultural lands within this state, who shall desire to drain the same in order to increase their productivity or otherwise render them more available for agricultural purposes and who shall deem it necessary, in order thereto, that a drain or drains, ditch or ditches, dyke or dykes for the free passage of water should be constructed, reconstructed, enlarged or cleaned on lands belonging to others, may present a petition duly verified to the commission setting forth the following facts:

1. The name and residence of the petitioner or petitioners.

2. A map or description showing the approximate location and area of the property which is to be drained.

3. A map or description which will show the location of such drain, ditches and dykes and the area of the lands and properties to be occupied thereby.

4. The names and places of residence of the owners of the property to be so occupied; if an infant, the name and place of residence of the person with whom he resides; if a lunatic, idiot, or habitual drunkard, the name and place of residence of his committee or trustee, if he has one; if not, the name and place of residence of the person with whom he resides; if a nonresident, having an agent or attorney residing in the state, authorized to contract for the sale of the property, the name and place of residence of such agent or attorney. If the name or place of residence of any owner cannot after diligent inquiry be ascertained, it may be so stated with a specific statement of the extent of the inquiry which has been made.

5. That the petitioner has been unable to agree with the owner or owners of the property for the damages to be paid for such occupation.

6. A statement that it is the intention of the petitioner, in good faith, to complete such drains, ditches and dykes, for which purpose the property is so occupied.

7. A request that the commission determine the necessity for such drainage and for occupying such lands and property and ascertain the compensation to be made to the owner or owners and that the petitioner be permitted, upon making such compensation, to construct, reconstruct, enlarge or clean said watercourses or drains, ditches and dikes, and maintain the same across the lands specified.

§ 496. Investigation by commission. Upon the receipt of such petition the commission shall take such steps as it shall deem proper to ascertain if the relief sought can be accomplished in the manner described in such petition and any other facts pertinent to the case and to this end may make such surveys or other investigations as may be in its judgment necessary in the premises.

§ 497. Notice of hearing. The commission shall appoint a time and place when and where it will hold a hearing for the purpose of determining the necessity for such drainage and for occupying such lands and properties and assess the damages resulting therefrom. The commission shall deliver to the petitioner copies of the petition, to which shall be attached a notice of the time and place appointed for a hearing, addressed to the owner of each parcel to be occupied. The petitioner upon receipt of such copies and notice shall, on the same day, or the next day thereafter, excluding Sundays and holidays, cause such copy and notice to be served upon the persons to whom it is addressed. A copy of such notice and petition shall be served on the owner of each parcel or to any one of several owners of a parcel in case there be more than one. In case the owner is an infant such copy and notice shall be served upon his general guardian, if he has one; if not, on the person with whom he resides. If a lunatic, idiot or habitual drunkard, service shall be made upon his committee or trustee, if he has one; if not, on the person with whom he resides. If a nonresident, having an agent or attorney residing in this state, authorized to contract for the sale of the real property described in the petition, service upon such agent or attorney will be sufficient service upon the owner. Depositing a copy and notice in the post-office, properly inclosed in an envelope addressed to the owner, guardian, committee, trustee, agent or attorney, respectively, at their post-office address, and paying the postage thereon shall be deemed proper service. Notice of such hearing may be given by publishing the same once a week for two successive weeks immediately prior thereto in two newspapers in the county or counties in which the lands and properties affected are located, provided personal service cannot be made. Such service shall be made at least fifteen days prior to the date of said hearing.

§ 498. Hearing; assessment of damages. The commission shall view the premises affected and at the time and place appointed shall hear all parties interested and such witnesses as they may produce. Such hearing may be adjourned at the discretion of the commission. At the close of such hearing, if the commission shall determine that the occupying of the lands and properties specified is necessary for the drainage of the lands of the petitioner.

it shall assess the damages to the person or the persons owning the same and fix the compensation to be made therefor. In fixing the amount of compensation for lands or property to be taken, the commission shall not make any allowance or deduction on account of any real or supposed benefits which the owners may derive from the proposed work. Such determination shall be signed by the commissioner and a copy thereof, duly certified by the secretary of the commission, shall be filed in the clerk's office of the county or counties in which such lands and properties are located.

§ 499. **Court review or decision of commission.** Within thirty days after the decision of the commission shall have been filed in the county clerk's office, the owner or applicant may apply to the supreme court for an order confirming, vacating or modifying such decision as to it shall seem just and legal. If the decision is vacated, the court shall remit the proceedings to the commission for another hearing. If no such motion be made, the decision of the commission shall be deemed final. The motion shall be brought on, upon the service of papers on the adverse party in the proceeding, according to the usual practice of the court in actions and special proceedings pending therein, and the decision of the supreme court shall be final except that a new hearing may be had, as herein provided. If the final decision shall be adverse to the applicant, no other application for the construction of the same works shall be made within one year.

§ 500. **Payment of damages; entry.** If after the expiration of thirty days proceedings have not been instituted to review the decision of the commission as provided in section four hundred and ninety-nine, the petitioner or petitioners shall pay the damages assessed by the commission and may thereafter enter upon such lands or properties for the purpose of constructing, reconstructing, enlarging or cleaning such drains, ditches and dykes. Deposit of the money to the credit of the owner or owners, pursuant to the direction of the commission, shall be deemed a payment within the provisions of this article.

§ 501. **Use of drains.** Any covered drains shall be for the sole use of the applicant, his heirs or assigns; nor shall the occupant or owner of the land through which said drain shall be laid be permitted to use the same without the permission of the applicant, his heirs or assigns, unless he shall have signified such intention to the commission prior to the assessing of the damages.

§ 2. This act shall take effect immediately.

INSPECTION AND SUPERVISION OF HYDRAULIC STRUCTURES

Jurisdiction over the docks and dams of the State is conferred upon the Conservation Commission by Section 22 of Article 3 of the Conservation Law. Briefly, this statute provides, with the exceptions stated below, that no structure for the impounding of water, or no structure used as a public landing place, shall be erected or reconstructed without notifying the Commission and complying with such conditions as it may prescribe for safeguarding life and property. Whenever public safety shall require, power is also conferred upon the Commission to make and enforce an order requiring: (a) the submission of plans and specifications for proposed construction or reconstruction work; (b) the revision of such plans for proposed work; (c) the removal, repair, or reconstruction of any existing structure; or (d) the completion of the necessary work in accordance with the plans and specifications approved by the Commission.

The section does not apply to a dam forming a part of the State's canal system, nor to any other where the area draining into the pond formed thereby does not exceed one square mile, unless the dam is more than ten feet in height above the natural bed of the stream at any point or unless the quantity of water which the dam impounds exceeds one million gallons; nor to a dock, pier, wharf or other structure under the jurisdiction of the department of docks, if any, in a city of the first class.

APPLICATIONS FOR APPROVAL OF PLANS FOR DAMS

Serial Number	Location Number	Watershed	Location	Owner	Purpose	Approved
208	652	Oswego	Freeville	.....	Power	Pending
209	625	Delaware	Gulf Summit	.....	Ice	Aug. 7, 1918
210	345	Susquehanna	Whitney Point	.....	Power	Pending
211	40	West Ontario	Waterport Station	.....	Power	Pending
212	203B	Lower Hudson	Nyack	.....	Power	Pending
213	450A	Black	Port Leyden	.....	Power	Pending
214	428	Champlain	Ausable Forks	.....	Ice	Pending
215	555	Lower Hudson	Glenham	.....	Power	Jan. 28, 1918
216	716	Lower Hudson	Pleasant Valley	.....	Power	Jan. 29, 1918
217	253	Upper Hudson	Schuylerville	.....	Power	July 6, 1918
218	47A	Salmon	Pulaaki	.....	Water supply	May 2, 1918
219	455	Champlain	Alder Brook	.....	Power	Nov. 18, 1918
220	327B	Lower Hudson	Sloatsburg	Power & Service Co., Inc.	Water supply	May 10, 1918
221	327J	Lower Hudson	Sloatsburg	Power & Service Co., Inc.	Water supply	Not in jurisdiction
222	327A	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
223	327C	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 8, 1918
224	327K	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
225	327L	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 2, 1918
226	327V	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
227	327W	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
228	327T	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 3, 1918
229	327X	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
230	327E	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 10, 1918
231	327G	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 3, 1918
232	327U	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 3, 1918
233	327R	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 3, 1918
234	327M	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	Pending
235	327Q	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	Pending
236	327S	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	Pending
237	327SA	Lower Hudson	Sloatsburg	Ramapo Mts. Water, Power & Service Co., Inc.	Water supply	May 3, 1918
238	324A	Black	Beaver Falls	Lewis & Locum & LeFevre Co.	Power	May 10, 1918
239	402	Erie	East Aurora	Electric Light Co.	Power	No action necessary
240	584	Raquette	Tupper Lake	J. E. Barbour	Power	No action necessary
241	340	Black	Croghan	Joseph Lehman	Power	June 25, 1918
242	785	Susquehanna	Oneonta	Light & Power Co.	Power	No action necessary

APPLICATIONS FOR APPROVAL OF PLANS FOR DAMS—Concluded

Serial Number	Location Number	Waterbed	Location	Owner	Purpose	Approved
328	263	Upper Hudson	Greenwich	Continental Paper Bag Co	Power	Aug. 20, 1918
329	897	Lower Hudson	Pine Plains	Frank Patchin	Power	Sept. 13, 1918
330	555	Erie	Gowanda	Light & Power Corp.	Power	July 22, 1918
331	208	Upper Hudson	Hosack Falls	R. Co.	Power	Nov. 20, 1918
332	243	Erie	Buffalo	& Buildings	Pleasure	Not approved
333	81	Champlain	Perry Mills		Power	Aug. 7, 1918
334	905	Lower Hudson	Jackson Corners		Power	Aug. 23, 1918
335	583	Oswego	Groton City		Power	No action necessary
336	1154	Lower Hudson	Coxsackie	Board of Water Commissioners	Water supply	Sept. 14, 1918
337	527	Raquette	Piercefield	International Paper Co.	Power	No action necessary
338	795	Susquehanna	Oneonta	Gas & Electric Co	Power	No action necessary
339	861	Mohawk	Waterville	Foundry & Mfg. Co.	Power	Sept. 26, 1918
340	1442	Lower Hudson	Grafton	Troy Bureau of Water	Water supply	No action necessary
341	740	Upper Hudson	Raquette Brook	American Glue Co.	Water supply	No action necessary
342	1391	Lower Hudson	Troy	Manning Paper Co.	Power	Sept. 18, 1918
343	258	St. Regis	Santa Clara	Santa Clara Lumber Co.	Log driving	Sept. 16, 1918
344	484	Mohawk	Seward	Sheffield Farms Co., Inc.	Ice	Nov. 19, 1918
345	741A	Lower Hudson	Hyde Park	Village of Hyde Park	Water supply	No action necessary

APPLICATIONS FOR APPROVAL OF PLANS FOR DOCKS

16.	310	Erie	Buffalo	Empire Engineering Co., Inc.	Landing	Jan. 29, 1918
17.	540M	Lower Hudson	Newburgh	Central Hudson Steamboat Co.	Freight	Mar. 27, 1918

REPAIRS TO SPILLWAY DAM CUBA LAKE RESERVOIR

Leakage around the east abutment and through the foundation of the spillway dam at the Cuba Lake Reservoir and the resulting frost action caused a considerable area of the concrete apron to be broken up and, as a result, the foundation of the apron was badly undermined during the spring freshets of 1917 and 1918. This Division made an estimate of the cost of repairing the dam and the Legislature appropriated \$7,000 by Chapter 571, Laws of 1918 for that purpose.

The reservoir was constructed in 1858 to supply water to the Genesee Valley Canal. Its capacity was increased several times up to the abandonment of the canal in 1878. Shortly after the Johnstown flood the spillway was lowered some six or eight feet to its present elevation. The original spillway was 110 feet long but when repairs were made in 1895 its length was increased to 210 feet. The concrete apron was built in 1904.

No accurate information could be found either in the shape of plans or descriptions which indicated the actual character of the construction or the materials underlying the dam, but from what plans could be found and a study of the conditions in the field, it was assumed that the spillway was built on a saddle and was probably a timber crib sheeted on the upstream side.

On account of the cost of making the necessary subsurface investigations on which to base plans and specifications in order to let contracts, it was decided that it would be more economical to do the work by force account. It was planned to excavate a trench for a concrete cut-off wall along the upstream side of the dam, exposing the surface of the same so as to ascertain the source of the leakage and to drive sheet piling if the foundation conditions uncovered seemed to warrant it. The apron, where broken up or undermined, was to be removed and replaced.

Work was begun as planned about September 15th, as it was desirable to maintain the normal level of the lake as long as possible for the convenience of the cottagers. The cut-off trench excavation disclosed leaks through the old timber section of the dam and around the east abutment. For the greater part of the

easterly 100 feet of the spillway, a good clay subsoil was uncovered at a depth of six feet below the spillway crest. At the west end of this section it was necessary to excavate 12 feet to remove the loose stone of the west abutment of the old spillway through which considerable leakage had occurred. There was little evidence of leakage on the west half of the spillway, which was constructed in 1895, and it was decided not to extend the cut-off wall across that portion. The old concrete apron was broken up and placed in the creek bed below the bridge. After refilling and grading, the new apron was laid in six-foot square blocks ten inches thick, and expansion joints were formed with tar paper. Weep holes were provided to drain off any seepage which might occur and a cut-off wall constructed perpendicular to the spillway along the west edge of the new section of the apron. A cut-off wall was also constructed across the lower end of the apron below the bridge. The work was completed January 6, 1919. Following is the estimate of the work done:

Excavation, cut-off trenches, 125 cu. yds.

Removal of old apron, 125 cu. yds.

Filling and grading apron, 100 cu. yds.

Portland cement concrete, cut-off walls, 151 cu. yds.

Portland cement concrete, apron and sidewalls, 126 cu. yds.

A total of 277 cu. yds. of Portland cement concrete.

Cost of Work:

Labor	\$2,981 56
Cement	1,414 20
Material and supplies, including rental of concrete mixer..	335 91
	<hr/>
	\$4,731 66
	<hr/>

It is recommended that an examination of the westerly portion of the spillway be made next spring to ascertain if there is any necessity of continuing the cut-off wall. If this should be found desirable, the balance of \$2,268.34 will be sufficient to cover the cost of the same.

Cuba Reservation.

Concrete apron of spillway dam damaged by frost and floods because of failure to provide proper cut-off walls.

APPENDIX A

ACTION TAKEN BY THE COMMISSION ON WATER SUPPLY AND SEWERAGE APPLICATIONS DURING THE YEAR ENDING DECEMBER 31, 1918

DECISIONS ON WATER SUPPLY APPLICATIONS RENDERED DURING THE YEAR 1918

WATER SUPPLY APPLICATION NO. 235

STATE OF NEW YORK — CONSERVATION COMMISSION.

<p style="text-align: center;">In the Matter of the</p> <p>Application of the VILLAGE OF DANSVILLE, for approval of its acquisition of an additional water supply and of its financial and engineering plans for the construction of such additional water supply.</p>	} <i>Decision.</i>
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Application filed October 24, 1917.

Hearing held in the village of Dansville, November 21, 1917.

Decision, Feb. 20, 1918.

Approved.

On October 24, 1917, Joseph Stiegler, President of the Board of Trustees of the village of Dansville, acting for and in the name of the said village, filed with the Conservation Commission an application for the approval of its plans for an additional water supply.

On November 20, 1917, the Commission caused the proposed source of additional water supply and the present water supply system of the village of Dansville to be inspected by one of its engineers.

After due notice published in the Dansville Express and the Dansville Breeze, a public hearing on this application was held in the Village Hall in the village of Dansville on November 21, 1917, at 10:00 o'clock in the forenoon. The petitioner was represented by Robert Pratt, Village Attorney. No one appeared in opposition.

The project for which approval is asked consists of the acquisition of the right to take the whole flow of Little Mill Creek, or so much thereof as may be needed, and of the construction of a new intake with a new 12-inch cast-iron supply main connecting the proposed new intake with the present intake.

Objections were filed by George F. Scott, the owner of certain riparian rights in Big Mill Creek in the village of Dansville on the ground that the plans do not make fair and equitable provision for the determination and payment of damage to his property.

After due study of the petition and its exhibits, the evidence and arguments given at the hearing and the report of the engineers of the Commission on this application, it appears that:

Dansville is a municipal corporation, incorporated as a village in 1845 by a special act of the legislature. It is located in the town of North Dansville, Livingston county, and is the southerly terminus of the Dansville & Mt. Morris Railroad. The Buffalo division of the Delaware, Lackawanna & Western Railroad passes through the easterly limits of the village. The population is about 4,000, according to the census of 1915. The assessed valuation, according to the last assessment roll, is \$1,767,638. The total outstanding bonded indebtedness is \$128,510, of which \$26,500 was issued for water supply purposes.

The present water supply is taken from two sources, namely, the so-called Ziegenfuss Springs and Little Mill Creek. The first of these sources is a group of springs flowing from the base of the high hill east of the village. Water from these springs collects in a small brook and flows perhaps one-half mile down stream to a small collecting basin, from which it is piped to a distributing reservoir having a capacity of 3.5 million gallons. From this reservoir a 12-inch cast-iron supply main leads to the village distribution system. This source of water supply was developed about 1896 but it proved insufficient in quantity and about three years later the second source of supply was developed. The right to divert 500,000 gallons per day from Little Mill Creek was obtained from the riparian owners, and a small masonry diversion dam was built across the creek bed at a point about 1½ miles southeast of the village. A 10-inch cast-iron supply main leads from the diversion dam to the village distribution system at a point near the southerly limits of the village. The elevation of the crest of the diversion dam is 950 feet above sea level; 12.4 higher than the surface of the above-mentioned distributing reservoir.

The village distribution system consists of about 16 miles of cast-iron mains from 4 inches to 12 inches in diameter, about 125 fire hydrants and about 1050 service connections. The service connections are not metered.

The yield of Ziegenfuss Springs has never been accurately determined but it is estimated that the average flow amounts to about 200,000 gallons per day. During dry periods, however, it is stated that the flow falls to about 100,000 gallons per day. There is no record of the flow of Little Mill Creek but the watershed at the intake dam has an area of about 12.5 square miles, consisting largely of rather hilly farm land. The only available streamflow record in this immediate vicinity is that of Little Tonawanda Creek at Linden, which has a watershed of about 22 square miles. The topographical and hydrological characteristics of both watersheds are similar, and it is probable that both watersheds yield about the same quantity of water per square mile of drainage area. During the months of August, September and October, 1913, the runoff at Linden averaged only 0.03 of a second foot per square mile. At this rate, Little Mill Creek during that period would have supplied only 0.375 of a second foot or about 250,000 gallons per day. It does not seem probable, therefore, that the total dependable supply from these two sources exceeds 350,000, or at most, 400,000 gallons per day during an extremely dry period. The superintendent of the water works states

that during the summer months it is often necessary to shut off the flush tanks on the sewer system and to discontinue the flushing of the pavements.

The quality of the water from the Ziegenfuss Springs appears to be reasonably good. The entire watershed tributary to the collecting basin is owned by the village and is carefully protected against pollution. Conditions might be improved somewhat by the erection of a new fence around the spring lot.

The water from Little Mill Creek, however, though of fair quality for surface water, should not be used for domestic purposes without filtration or sterilization. A series of analyses made by the State Department of Health indicates that it is moderately hard, usually low in color, and at times somewhat turbid. The water is comparatively low in decomposable and decomposing organic matter but rather high in chlorine. The total bacterial counts are high even for a surface supply. Organisms of the *B. coli* type occur frequently in the 10 c.c. and occasionally in the 1 c.c. inoculations, indicating a certain amount of contamination of human or animal origin.

The watershed has a population of about 300 persons, and most of the houses are well removed from the tributary streams. The watershed is inspected weekly by an employe of the Board of Water Commissioners, and the toilets on the trains of the Delaware, Lackawanna & Western Railroad are closed while trains are crossing the watershed. While the Water Commissioners have shown care and diligence in protecting the watershed, it does not appear to be safe to use this water for domestic purposes without sterilization. None of the water supplied to the village of Dansville is treated at present.

The total cost of the present water works system is said to have been about \$90,000. As the present supply is not metered, the consumption is not definitely known but it is estimated to be about 700,000 gallons per day. The maximum consumption occurs in the winter, when large quantities of water are wasted to prevent the freezing of service pipes. There is a demand for additional water by certain manufacturing plants, among which is a paper mill which now uses about 50,000 gallons per day but would make use of from 300,000 to 400,000 gallons per day if such quantity were available. If these industries are satisfied the consumption will probably exceed 1,000,000 gallons per day.

During a dry period the Ziegenfuss Springs, as before stated, can be depended on to supply only about 100,000 gallons per day, while the flow of Little Mill Creek during a period as dry as the summer of 1913, will probably not exceed 300,000 gallons per day. This leaves a perspective deficiency of about 600,000 gallons per day, which can be supplied only by storage or by the development of additional sources of supply other than Little Mill Creek and the Ziegenfuss Springs.

Under ordinary conditions, when the distributing reservoir is full, fire protection is reasonably good except in the extreme upper part of the village. The reservoir holds an ample reserve for any ordinary fire likely to occur. It is stated, however, that it has been customary to empty the reservoir during the summer or fall for cleaning, and at such times the available supply of water is limited to the low-water flow of the Ziegenfuss Springs and Little Mill Creek, which as above stated may not exceed 400,000 gallons

per day. This quantity would be insufficient to supply two standard fire streams assuming domestic consumption entirely shut off. Therefore, if a fire should occur when the reservoir is empty and during a period of minimum flow in Little Mill Creek, fire protection would be entirely inadequate. This condition should be guarded against by keeping the reservoir always full except in case of extreme emergency. The reservoir should be emptied for cleaning only during the wet period of the year.

The village has a complete system of sewers with sewage disposal works. The system includes 54 flush tanks, which at times, however, cannot be operated because of shortage of water.

The acquisition of the proposed additional water supply was authorized by a majority vote at the annual village election held February 13, 1917, and at the same election a bond issue of \$12,000 was approved. On October 8, 1917, an application to this Commission was authorized by the Board of Trustees. Plans for the proposed improvements were prepared by Charles C. Hopkins, Consulting Engineer, of Rochester, N. Y.

No changes in the sources of supply are contemplated in the proposed improvements. The village intends to acquire the right to take the whole flow of Little Mill Creek, or so much thereof as may be needed, in addition to its present right of 500,000 gallons per day. It is also proposed to construct a new intake at a point about $\frac{1}{4}$ of a mile above the present intake and to lay a new 12-inch cast-iron supply main from the proposed new intake to the present intake, connecting at the latter point with the present 10-inch supply main.

The new intake will consist of a concrete dam, founded on rock, at the head of a falls near the Livingston-Steuben county line. This dam will be about 5 feet high and 30 feet long with a 26-foot spillway. The elevation of the spillway will be 1001, sea level datum, approximately 63 feet higher than the distributing reservoir and 280 feet above the central part of the village. The intake works will be located at the right end of the dam and will consist of a rather elaborate system of racks and screens to prevent clogging with ice. The racks will consist of vertical wooden bars, 2 inches thick and 6 inches wide, set oblique to the direction of the flow, pointing down stream in such manner as to divert ice and floating debris from the intake. The valve chamber will be screened with quarter-inch galvanized iron wire screen. A 12-inch gate valve in a concrete gate house will control the entrance of water into the 12-inch supply main, leading to the present intake. This pipe will be laid in a trench in the bed of the stream. The quantity of water available will be the same as at the present time except that the village will acquire the right to take the whole flow of the stream when it is needed. The plans do not provide for purification works or for any change in the sanitary quality of the water.

A filtration plant, to be located at a point near the present distributing reservoir, has been contemplated but is not to be included in the improvements to be made at this time. Until this filtration plant is constructed, the water from Little Mill Creek should be sterilized with liquid chlorine or other equally effective sterilizing agent before it can safely be used for domestic purposes.

The chief improvement to be effected by the proposed relocation of the intake will, therefore, be the greater pressure made available by the increased head of 50 feet. Fire protection will be somewhat improved by this greater head and it will be possible to discharge a considerably greater quantity of water through the supply mains, but only at such times as this increased quantity of water is available in Little Mill Creek. If, at a later date, the above-mentioned filtration plant is constructed near the site of the present distributing reservoir, this increased head will be needed in order to deliver a sufficient quantity of water from Little Mill Creek to the filtration plant. It should be pointed out, however, that the total quantity of water available in a dry time will in no way be increased by the proposed improvements and that the only way by which an adequate supply of water for fire protection can be assured is by keeping the distributing reservoir always full during a dry period, or by the development of storage on Little Mill Creek.

As the proposed new intake is to be located but a short distance up stream from the present intake, which must be used during construction, there will be grave danger of contamination of the village water supply during the construction period. Especial precautions must be taken to protect the water supply during this period. It will therefore be required that the proposed method of guarding the purity of this water during the construction period be submitted to this Commission and approved by it. It is recommended that a temporary intake be located at a point above the site of the proposed dam and that a temporary supply main be laid from this point to the present intake.

The cost of the proposed improvements is estimated at \$8,790, leaving \$3,210 for land damages, legal expenses and incidentals. This sum appears to be ample unless there are further large advances in construction costs or unexpectedly large property damages.

The proposed improvements, if constructed in accordance with the plans submitted, of suitable materials and with satisfactory workmanship, will be safe for the purposes for which they are designed.

The only additional lands required are the site of the new dam and the right of way for the 12-inch supply pipe between the old and the new intake works. The diversion of an additional quantity of water from Little Mill Creek will have some effect on riparian rights on Big Mill Creek through the village of Dansville. There were at one time 4 mills on this creek, utilizing heads varying from 10 to 24 feet, but at the present time only one of these mills is in operation. This is the grist-mill owned by George F. Scott, who has filed objections to the proposed improvements. A head of about 10 feet is utilized at this mill. One of the other mills has been demolished and the other two have discontinued the use of water power.

As the diversion by the village will probably not exceed 500,000 gallons per day, in addition to the quantity it now has a right to divert, the effect on these riparian rights will be very slight. This quantity of water, under a 10-foot head, would produce less than one horsepower. It therefore appears that ample provision has been made for the payment of all damages to these properties.

There are in this vicinity several other streams from which it would be possible to take a sufficient quantity of water to supply the increased needs of the village, but none of them appears to be so advantageous in quality or cost as that now in use. The present sources of supply appear to be the logical and proper ones for the village of Dansville.

It does not appear that by the construction of the proposed improvements the water supply interests of any other municipality or civil division of the State will be adversely affected.

The legal damages which may be caused by the execution of the plans of the petitioner do not appear to be such as to require any special consideration or legislative enactment in order that they may be equitably determined and paid.

In consideration of the above, and subject to the modifications hereinafter stated, the Commission therefore finds and determines:

First. That the plans proposed are justified by public necessity.

Second. That the plans provide for the proper and safe construction of all work connected therewith.

Third. That the plans provide for the proper protection of the supply and the watershed from contamination, and that filtration is at the present time unnecessary.

Fourth. That the said plans are just and equitable to other municipalities and civil divisions of the State affected thereby and to the inhabitants thereof, particular consideration being given to their present and future necessities for sources of water supply.

Fifth. That said plans make fair and equitable provisions for the determination and payment of any and all legal damages to persons and property, both direct and indirect, which will result from the execution of said plans or the acquisition of said lands.

Provided, however, that the said application, maps and plans, as submitted, shall be modified, and the Commission does hereby determine that they be modified and that the work done thereunder be subject to the following conditions:

1. All the work proposed in this application shall be completely constructed in accordance with the plans as hereby modified.

2. The so-called Ziegenfuss Springs lot shall be securely fenced in such manner as to exclude all domestic animals.

3. The village of Dansville shall procure the enactment by the State Department of Health of rules and regulations for the sanitary protection of all watersheds from which the water supply of the said village is obtained; shall put these watersheds in proper sanitary condition and thereafter shall diligently enforce the provisions of these rules and regulations.

4. The proposed method of protecting the water supply of the village during the construction of the new intake and supply main shall be submitted to and approved by this Commission before work is begun.

5. The village shall install suitable apparatus for sterilizing all water taken from Little Mill creek with liquid chlorine or other equally effective sterilizing agent, and after the completion of these works, no water

from Little Mill creek shall be admitted to the distribution system of the village until it shall have been sterilized in a satisfactory manner.

6. After these works have been constructed, they shall be inspected by and be subject to the approval of this Commission, and such works shall not be operated until permit to do so has been issued by this Commission, as provided by section 523 of the Conservation Law.

Wherefore, the Conservation Commission does hereby approve the said application of the village of Dansville as thus modified.

IN WITNESS WHEREOF, the Conservation Commission has caused this determination and approval to be signed by the Commissioner and [L. S.] has caused its official seal to be affixed hereto and has filed the same with all maps, plans, reports and other papers relating thereto in its office in the city of Albany this 20th day of February, 1918.

CONSERVATION COMMISSION,

GEO. D. PRATT,

Commissioner.

Attest: A. S. HOUGHTON,

Secretary to the Commission.

WATER SUPPLY APPLICATION NO. 237

STATE OF NEW YORK — CONSERVATION COMMISSION.

<p style="text-align: center;">In the Matter of the Application of the VILLAGE OF HOLLEY, for approval of its acquisition of the plant of the Holley water works.</p>	<p>} <i>Decision.</i></p>
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Application filed November 13, 1917.

Hearing held in the Village of Holley, December 5, 1917.

Decision, January 23, 1918.

Approved.

On November 8, 1917, Nervill L. Cole, president of the board of trustees of the village of Holley, acting on behalf and in the name of the said village, made application to the Conservation Commission for approval of its acquisition by purchase from the Brockport-Holley Water Company of the existing plant of the said Brockport-Holley Water Company in and adjacent to the village of Holley. This application was duly filed on November 13, 1917.

After due notice published in the Holley Standard, the Brockport Democrat and the Orleans American, a public hearing on this application was held in the Village Hall of the village of Holley on December 5, 1917, at 10:00 o'clock in the forenoon. At this hearing the Commission considered the petition, maps and plans submitted, examined witnesses and heard argu-

ments for the project, as shown by the minutes. The petitioner was represented by Mr. J. K. Smith, Village Attorney, and Mr. Frederick M. Thomson, of counsel. No objections were filed and no one appeared in opposition.

On December 5, 1917, the Commission caused the said water supply system of the Brockport-Holley Water Company to be inspected by one of its engineers.

The village of Holley proposes to purchase the entire waterworks system of the Brockport-Holley Water Company in and adjacent to the said village, including wells, springs, pumping plants, mains, pipes, hydrants, land, buildings and water rights of every nature, and thereafter to operate the said system through its duly accredited officials. The petitioner does not contemplate making any change in the source of supply, or of acquiring any additional sources of supply of water after the said plant shall have been acquired by the village.

After due study of the petition and its exhibits, the evidence and arguments given at the hearing and the report of the engineers of the Commission on this application, it appears that the village of Holley is a municipal corporation, incorporated under the Village Law in 1867. It is located in the town of Murray, Orleans county, and is traversed by the Niagara Falls and Rochester Branch of the New York Central Railroad, the Buffalo, Lockport and Rochester Electric Railroad and the Barge Canal. The population was 1780 in 1915, and is now estimated at 1800. According to the last assessment roll the assessed valuation was \$1,011,452. The outstanding bonded indebtedness is \$77,500, none of which was incurred for water supply purposes. The village is a residential town with few manufacturing industries.

The Brockport-Holley Water Company is a domestic corporation, incorporated under the Transportation Corporations Law for the purpose of supplying water to the villages of Brockport and Holley.

The Brockport-Holley Water Company formerly supplied water to both Brockport and Holley, but in 1912 the village of Brockport acquired a separate source of water supply and purchased the distribution system of the Brockport-Holley Water Company in the village of Brockport, thus restricting the territory of the water company to the village of Holley.

It is contended by the village that, due to the consequent curtailment of its revenue, the water company has refused, or has been unable, to make needed extensions in the village; that the water company has demanded increased rates from consumers and that it has refused to furnish water for the operation of sewer flush tanks unless the village would make an additional payment of \$500 per year therefor. There is now pending a suit against the village for increased hydrant rental.

Agitation for the purchase of the waterworks system by the village resulted in an offer by the water company to sell its properties to the village for the sum of \$55,000. This offer was subsequently ratified by the stockholders on October 16, 1917.

The present water supply system consists of seven wells, located at various points from $\frac{1}{2}$ mile to 1 mile south of the village along or near the banks of Sandy Creek and its smaller tributaries; two pumping stations; a steel standpipe and a village distribution system, together with necessary lands, water rights and rights of way. Two of the above mentioned wells, known

as the north and south Salisbury wells, were constructed about 1890. These wells are 20 feet in diameter and from 13 to 16 feet deep, extending to rock. They are curbed with rubble masonry walls, extending about 18 inches above the ground surface, and are covered by frame and shingle roofs. In the bottom of each well one or more 6" holes have been drilled into the rock to a depth of about 70 feet. It is said that the water supply is drawn principally from these holes, but it is probable that a large part of the water flows into the wells from the adjacent soil. The normal water level is but a few inches below the ground surface.

A third well, known as the east Salisbury well, located perhaps 2000 feet east of the other two, was built about 1897. Its construction is similar to those already described. These three wells are in excellent condition and need only minor repairs to the roofs.

Some year later two other wells, known as the Glidden springs, were constructed on the banks of a small brook about one mile northwest of the above mentioned Salisbury wells and near the southwest corner of the village line. These wells are octagonal in shape, 20 feet in diameter and about 15 feet deep. The curbing is built up from the bottom of 2" x 8" plank, laid flat and bolted or spiked together. The southerly of these two wells is located under a pumping station and is covered by the plank floor of the building. The other is about 100 feet northerly from the pumping station and is covered by a frame roof.

The other two wells, known locally as the Clarendon wells, are really infiltration galleries, built across a swampy gully from 100 to 150 feet wide. They were constructed by driving two lines of plank sheeting and by excavating the material between to a depth of from 10 to 12 feet. The sheeting is held in place by 6" x 6" stringers and braces. Both galleries are covered by frame and shingle housing.

The lower well is L shaped in plan, the longer leg being 102 feet long, extending across the gully, and the shorter 66 feet long, extending downstream along the southerly bank. The other gallery, located a few hundred feet upstream, is about 80 feet long and extends across the gully. Both are in very poor state of repair.

From the Salisbury wells and the Clarendon infiltration galleries water flows by gravity to a pumping station known as station No. 1. This is a substantial stone building about 46 feet by 70 feet, located on the easterly bank of Sandy creek adjacent to a masonry dam about 50 feet long and 7 feet high. This dam is located at the head of a small falls, which makes available a total head of about 22 feet and provides hydraulic power for pumping during perhaps nine months of the year. The pumping station is equipped with a 24" Leffel water wheel, geared to two direct acting pumps; two 75-horsepower return tubular boilers, furnishing power for one combined duplex steam pump; one duplex single acting pump; one boiler feed pump; a feed water heater; a small air compressor, installed for use with a mechanical filter; and necessary piping, valves, etc. There is also an old circular gravity filter, which proved a complete failure and has been partially dismantled. Water is conducted to the pumping station from the east Salisbury well through a 4-inch wrought iron pipe about 1240 feet long. From the Clarendon infiltration galleries a 6-inch wood pipe leads to a gate house

located midway between the north and south Salisbury wells. This pipe is said to be in reasonably good state of repair.

The north and south Salisbury wells are connected to the above mentioned gate house by 4-inch cast-iron pipes. The supply line from this gate house to the pumping station is made up of 740 feet of 6-inch cast-iron pipe and 840 feet of 6-inch wrought iron pipe. From the pumping station an 8-inch cast-iron force main, about 1887 feet long, leads to a steel standpipe 20 feet in diameter and 75 feet high, located at a point about $\frac{1}{4}$ mile south of the village line. The top of this standpipe is about 150 feet higher than the business section of the village. From the standpipe an 8-inch cast-iron pipe, about 1425 feet long, connects with the village distribution system.

Pumping station No. 2 is located over the southerly of the above-mentioned Glidden springs. This station is a flat-roof, stone-and-frame structure, about 28 feet by 30 feet with a coal shed addition 15 feet by 30 feet. The station is equipped with a horizontal return tubular boiler and a combined duplex steam pump. The building is in poor state of repair, but the equipment appears to be in reasonably good shape.

From these wells a 6-inch cast-iron pipe about 1875 feet long connects with the supply main leading from the standpipe to the village distribution system. There was formerly a line of about 3000 feet of 4-inch cement-lined pipe connecting these wells with the Salisbury gate house, but this pipe has been abandoned.

The village distribution system consists of about five miles of cast-iron pipe, chiefly in 4-inch and 6-inch sizes. There are also 43 fire hydrants, 41 gate valves, 504 service connections, 18 flush tanks and about 250 meters. All appear to be in reasonably good condition considering the length of time they have been in use. In addition to this distribution system there is a line of 8-inch cast-iron pipe about 4 miles long running between Brockport and Holley. This line is included in the property to be purchased by the village. It is proposed to take up this pipe and to re-lay it in place of some of the small-size pipes in the village to increase the pressure and improve fire protection. The other property to be purchased includes certain lands at the springs, water rights, rights of way for pipe lines and a small frame dwelling in the village.

No reliable statistics are available as to the yield of any of these springs, but there has never been a shortage of water since the village of Brockport installed a separate system. The superintendent of the water works states that during dry periods he has pumped at least 150,000 gallons per day from the three Salisbury wells, about 150,000 gallons per day from the two Glidden wells and perhaps 75,000 gallons per day from the two Clarendon infiltration galleries. This makes a total of about 375,000 gallons per day. Whether or not this is the maximum capacity of these wells is unknown.

The sanitary condition of the three Salisbury wells is good. There is no evidence that they are ever flooded, or that surface water finds its way into the wells. The northerly of the Glidden springs is in fair condition, but the curb should be increased in height by perhaps two feet to eliminate the possibility of being flooded from the adjacent brook. The southerly spring, located under the No. 2 pumping station, is subject to pollution and drainage through the plank floor of the station. It should be provided with a new

curb and a water-tight floor. At the Clarendon infiltration galleries conditions are decidedly bad. Some attempt has been made to protect the lower gallery by means of an earth dike across the gully on the upper side of the gallery, but this does not prevent almost direct entrance of surface water at the northerly end of the gallery during floods. At the upper gallery surface water enters directly through several large holes in the timber flume, which is supposed to carry the surface flow of the stream across the gallery. The water in this stream drains from an area of perhaps 500 acres of farm lands, on which are located several dwellings and barn yards. None of the water from any of these wells is treated before being supplied to the village.

A series of analyses, made by the State Department of Health during the past five years from a tap in the village, indicates that the water has but little color, some turbidity and that it is high in hardness. Nitrates and chlorine are high, indicating the probability of surface pollution. The bacterial count runs very high at times and colon bacilli are frequently present, indicating active and potentially dangerous contamination. It seems probable, however, that most of this pollution comes from the direct entrance of surface water into the Clarendon infiltration galleries and possibly from drainage from the floor of the No. 2 pumping station into the southerly of the Glidden springs. There appears to be little opportunity for pollution at either of the three Salisbury wells.

The Glidden springs can be placed in satisfactory condition by minor alterations, as suggested above, but the Clarendon infiltration galleries cannot safely be used as a source of water supply without filtration or sterilization until they have been entirely rebuilt in such manner as to effectively exclude all surface water.

The cost of this waterworks system is not definitely known. Mr. C. C. Hopkins, Consulting Engineer, in March, 1917, estimated the reproduction cost of the system at \$102,710 at prices current at that time. After making suitable reductions for age and depreciation, he estimated the present value of the system to be \$60,150. At normal prices, prevailing in 1914, he estimated that the present value would be about \$40,825. In addition to these values he estimated the scrap value of the Brockport-Holley line at \$2435.

From the best available information it appears that the consumption of water by the village of Holley varies from 65,000 to 125,000 gallons per day with an average of about 80,000 gallons per day. If the plant is taken over and operated by the village, however, the consumption will probably be somewhat increased by the use of water for sewer flushing and other public purposes. It seems probable that the consumption will be increased to at least 100,000 gallons per day. This is about 55 gallons per capita per day and is not high for a village of this size. As the capacity of the Salisbury wells alone is estimated at not less than 150,000 gallons per day, it is evident that there is available a plentiful supply of water for all reasonable needs.

Due chiefly to the large amount of 4-inch pipe in the village distribution system, fire protection is not especially good. The reserve capacity of the standpipe is also too small for adequate fire service without direct pumping. Not more than half the capacity of the standpipe, or say 90,000 gallons, can be considered as effective for fire reserve. This quantity would maintain

three standard fire streams for only about two hours. With the pumps in operation, however, a considerable reserve might be drawn from the various wells. It is estimated that with suitable connections about 85,000 gallons could be drawn from the Salisbury wells, about 70,000 from the Glidden springs and perhaps 75,000 gallons from the Clarendon galleries. The Clarendon galleries, however, should not be depended on for either fire or sanitary service until they have been rebuilt.

The combined natural flow of the Salisbury and Glidden wells is said to be about 200 gallons per minute, less than one standard fire stream, but, with a reserve of 155,000 gallons in these wells, a flow of about 750 gallons per minutes, or three standard fire streams could be maintained for about 4½ hours. The total fire reserve, therefore, would be about 240,000 gallons, which would maintain three standard fire streams for about 6½ hours in addition to the domestic consumption of 100,000 gallons per day.

At pumping station No. 1 there is an 8-inch pipe connecting with a pool formed by the waters of Sandy creek. This pipe was installed for emergency fire service during the time that the water company was supplying both Brockport and Holley. It is said that this connection was made use of at times to increase the supply of water for ordinary purposes as well as for fire service, but that it has never been used since the water company ceased supplying the village of Brockport. The use of this connection would be highly objectionable, as the waters of Sandy creek are polluted with surface drainage and sewage from the neighboring village of Clarendon, about three miles upstream from the pumping station. This connection should be removed and such additional reserve as is necessary for fire protection should be created by enlarging either the standpipe or the storage capacity of the wells.

The village of Holley has a municipal sewerage system and disposal plant, the latter consisting of Imhoff tanks and sprinkling filters. The effluent from the disposal plant discharges into Sandy creek. The dead ends of several sewers are equipped with flush tanks, which, due to a disagreement with the water company, have never yet been operated.

The Village Board of Trustees, at a regular meeting held September 12, 1917, called a special election for the purpose of voting on the proposition to purchase this waterworks system and to authorize a bond issue of \$55,000 in payment therefor. This election was held September 26, 1917, and the proposition was approved by a vote of 75 to 25. Nervill L. Cole, President of the Board of Trustees, was authorized at a meeting held October 29, 1917, to make application to this Commission for its approval. Mr. Charles C. Hopkins, Consulting Engineer, was engaged as engineer for the village.

All parts of the system, except the Clarendon infiltration galleries, appear to be in serviceable condition, and there is no reason to doubt their safety. The distribution system could be improved somewhat by the substitution of larger sizes of pipe for the present 4-inch mains.

The petitioner does not contemplate the acquisition of any additional lands, water rights or rights of way.

There appear to be two possible alternative sources of supply. (1) Water might be taken from Sandy creek, filtered and pumped into the existing standpipe and distribution system. This supply would be sufficient in quantity for all the needs of the village, but the cost of filtration would make the

project very expensive. (2) Barring legal restrictions, water might be taken from the Barge Canal, filtered and distributed to the village. There might be some difficulty, however, in obtaining water from this source during the winter months when the canal is not in operation. The cost of this system would also be very high and there would undoubtedly be considerable objection on the part of the consumers to using water from this source. Neither of these sources of supply can be considered a practicable substitute for the system now in use.

It does not appear that the acquisition of this waterworks system by the village of Holley will adversely affect any other civil division of the State.

The legal damages which may be caused by the execution of the plans of the petitioner do not appear to be such as to require any special consideration or legislative enactment in order that they may be equitably determined and paid.

In consideration of the above, and subject to the modifications hereafter stated, the Commission therefore finds and determines:

First. That the plans proposed are justified by public necessity.

Second. That said plans provide for the proper and safe construction of all work connected therewith.

Third. That the said plans provide for the proper protection of the supply and the watershed from contamination and that filtration is at the present time unnecessary.

Fourth. That said plans are just and equitable to the other municipalities and civil divisions of the State affected thereby and to the inhabitants thereof, particular consideration being given to their present and future necessities for sources of water supply.

Fifth. That said plans make fair and equitable provisions for the determination and payment of any and all legal damages to persons and property, both direct and indirect, which will result from the execution of said plans or the acquiring of said lands.

Provided, however, that the said application, maps and plans, as submitted, shall be modified and the Commission does hereby determine that they be modified and that the work done thereunder be subject to the following conditions:

1. After this waterworks system shall have been acquired by the village of Holley, no water from the so-called Glidden wells shall be used, except for fire service, until a suitable watertight curb and floor shall have been built over the southerly well located under the No. 2 pumping station, in such manner as to completely exclude from the well all surface water and drainage from the pump house floor and until the curbing around the northerly well shall have been raised to a sufficient height to exclude all possibility of being flooded by water from the adjacent stream.

2. No water shall be drawn from the infiltration galleries, known as the Clarendon wells, until these galleries have been rebuilt in such manner as to completely exclude all surface water, in accordance with plans which shall have been approved of by this Commission.

3. Within one year from this date, the village shall install a sufficient reserve supply of water for suitable and adequate fire protection with-

out pumping from Sandy creek, and within one year from this date the 8-inch connection between Sandy creek and the pump well at pumping station No. 1 shall be removed.

4. If future analyses or inspections or changed conditions shall indicate the necessity therefor, the village of Holley shall, upon order of this Commission, install, at a suitable point, apparatus for the sterilization of all water drawn from any of these sources of supply in a manner satisfactory to this Commission, and, if sterilization shall be so ordered, the village shall thereafter permit no water to be taken for any purpose from any part of its supply or distribution system until such water has been sterilized in a satisfactory manner.

5. After these works shall have been acquired by the village of Holley and after reasonable time has been allowed for compliance with this decision, the Commission will cause the works to be inspected by its engineers and, if the requirements of this decision have been complied with, a permit to operate will be issued to the village of Holley in accordance with the provisions of section 523 of the Conservation Law.

Wherefore, the Conservation Commission does hereby approve the said application of the Village of Holley as thus modified.

IN WITNESS WHEREOF, the Conservation Commission has caused this determination and approval to be signed by the Commission and has caused its official seal to be affixed hereto and has filed the [L. S.] same with all maps, plans, reports and other papers relating thereto in its office in the city of Albany, this 23d day of January, 1918.

CONSERVATION COMMISSION,

GEO. D. PRATT,

Commissioner.

Attest: A. S. HOUGHTON,

Secretary to the Commission.

WATER SUPPLY APPLICATION NO. 238

STATE OF NEW YORK — CONSERVATION COMMISSION.

<p style="text-align: center;">In the Matter of the</p> <p>Application of the VILLAGE OF NUNDA, for approval of its acquisition of a source of water supply and of the purchase by it of the Nunda Waterworks System.</p>	<p style="font-size: 3em;">}</p> <p><i>Decision.</i></p>
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Application filed May 13, 1918.

Hearing held in the village of Nunda, June 4, 1918.

Decision, July 9, 1918.

Approved.

On May 11, 1918, James H. Baker, President of the Board of Trustees of the village of Nunda, acting on behalf of and in the name of the said village,

made application to the Conservation Commission for approval of its acquisition of a source of water supply and of the purchase of the Nunda waterworks system. This application was filed on May 13, 1918. On June 4, 1918, the Commission caused the proposed source of supply and the waterworks system of the Nunda Water Works Company to be inspected by one of its engineers.

After due notice published in the Nunda News, a hearing on this petition was held in the Village Hall in the village of Nunda on June 4, 1918, at 11:00 o'clock in the forenoon. At this hearing the Commission considered the petition, maps and plans submitted, examined witnesses and heard arguments for the project. The petitioner was represented by George R. Graves, Village Attorney, and James H. Baker, President of the Board of Trustees. No objections were filed and no one appeared in opposition.

The project for which the village asks approval is the purchase of the waterworks system of the Nunda Water Works Company. Since 1889 this waterworks system has been operated by the Nunda Water Works Company, or its predecessors, as a source of water supply for the village of Nunda. General dissatisfaction with the service given and a desire to make certain extensions and improvements is stated to be the reason for the desire on the part of the village for the purchase of the system. The village of Nunda proposes to take over the entire properties of the Nunda Water Works Company, including springs, pipe lines, reservoirs, distribution system and lands and water rights.

After due study of the petition and its exhibits, the evidence and arguments presented at the hearing and the report of the engineers of the Commission on this application, it appears that:

The village of Nunda is a municipal corporation, incorporated as a village in 1939 by a special act of the Legislature. It is situated on Keshequa creek in the western part of the town of Nunda, Livingston county. The population in 1915 was 1140 and the assessed valuation, according to the last assessment roll, was \$482,593. The village has a bonded indebtedness of \$28,720, of which \$26,000 was issued for the purchase of this waterworks system and \$2720 for highway improvements.

Negotiations for the purpose of the waterworks system by the village have been underway for several years. A few years ago a proposition to purchase the system was submitted to the voters and voted down, but in 1917 the water company made another offer of its entire works for the sum of \$26,000. This proposition was submitted to the voters at a special election held April 10, 1917, and was carried in the affirmative by a vote of 93 to 23. The issue of bonds to the amount of \$26,000 for this purpose was authorized by the Board of Trustees on July 13, 1917. The bonds were sold to Chester T. Foote at a premium of \$500 on July 23, 1917. On March 11, 1918, the Board of Trustees authorized the village president to apply to this Commission for its approval of the purchase of this waterworks system. In its negotiations with the waterworks company, the village employed no engineer, but the value of the waterworks system was estimated by a committee of citizens consisting of Messrs. A. B. Kent, N. S. Barker, C. T. Foote and E. F. Hunter.

The waterworks system purchased by the village consists of two groups of springs, a distribution reservoir, about four miles of supply pipe line and

a distribution system consisting of about seven miles of 4-inch and 6-inch pipe, together with hydrants, valves and various fittings, a small steam pump and certain lands and water rights.

The first group of springs, known as the Bradley Spring, was developed about 1887. It is located on the hillside forming the westerly bank of the east branch of the Keshequa creek at a point about two miles southeast of the village of Nunda. The water which seeps from the ground in a depression in this hillside is collected in several lines of drain tile laid in ditches about 12 inches below the surface of the ground and is discharged into a concrete collecting reservoir about 8 feet in diameter and about 4 feet deep. From this collecting reservoir it flows by gravity to the village distribution reservoir located a short distance south of the village.

The second source of supply, known as the Seager Spring, was acquired several years ago when the supply from the Bradley spring was found insufficient for the needs of the village. This source of supply is not a true spring, but rather an infiltration gallery consisting of about 150 feet of tile pipe laid in the ground parallel with and distant from 5 to 10 feet from a small brook which forms the headwaters of the east branch of Keshequa creek. The tile pipe discharges into a plank collecting reservoir about 3 feet by 5 feet in plan and 2 feet deep. From this reservoir it flows by gravity through a wood stave pipe about two miles long, connecting with the pipe line from the Bradley spring to the above mentioned distribution reservoir.

A third source of supply included within the properties purchased by the village is another so-called spring, located near the bank of the west branch of Keshequa creek within the village limits. This spring consists of a small collecting basin built in an old mill race opposite a timber dam which has been partially destroyed by floods. Water from this collecting basin was formerly pumped into the distribution system by a steam pump located in the basement of the factory of the Nunda Casket Company and operated by steam from this company's plant. Since the destruction of the dam, however, little or no water has entered this collecting basin and this source of supply has not been used. It does not appear probable that this dam will ever be rebuilt and, therefore, it will be impossible to obtain additional water from this source. This water is not suitable for domestic purposes without purification.

The pipe line from the springs to the distribution reservoir consists of about 10,400 feet of old 4-inch wood stave pipe between the Seager and Bradley springs and about 9000 feet of comparatively new 4-inch and 5-inch wood stave pipe between the Bradley spring and the distribution reservoir. The pipe between the Seager and Bradley springs follows approximately the line of an old railroad, and it appears to have been laid with little attention to hydraulic requirements. At several points the pipe appears to be above the hydraulic grade line and there are several low points which are not provided with blow-off valves. These low points appear to be more or less filled with sand and gravel, and it is probable that the parts of the pipe line above the hydraulic grade line are more or less decayed. The new pipe between the Bradley spring and the distribution reservoir appears to have been laid in a somewhat better manner. The village officials say that they intend to relay the older pipe line as soon as funds are available.

The distribution reservoir is a stone masonry structure 40 feet by 50 feet in plan and 12 feet deep. Its capacity when full is about 180,000 gallons. This reservoir is in good condition and is well protected from pollution by a masonry parapet wall and a tight fence. From the reservoir to the village distribution system the line consists of about 2500 feet of 8-inch wood stave pipe and about 2000 feet of comparatively new 6-inch cast-iron pipe. The wood stave pipe is said to have been laid about 30 years ago. It appears to be quite badly decayed and in an unsafe condition. Several bad leaks have developed within the last few months. The cast-iron pipe appears to be in good condition.

The distribution system is said to consist of about 10,600 feet of 4-inch, 6-inch and 8-inch cast-iron pipe and about 1150 feet of 4-inch galvanized iron pipe laid within the past five years, together with about 24,000 feet of wood stave pipe, which has been in the ground for from 20 to 30 years. There are also 44 fire hydrants, about 12 gate valves and one reducing valve in use. The supply is not metered and there are no statistics as to yield and consumption. Owing to a considerable amount of leakage in the old pipe lines, it appears probable that the consumption exceeds 100,000 gallons per day. The yield of the springs appear to be adequate for all reasonable needs of the village. There is no reason to expect any great increase in consumption, but, if necessary, the yield of the Seagar spring can be increased somewhat by the laying of additional lines of tile pipe along the above mentioned brook.

A series of analyses of this water, made by the State Department of Health during the past five years, indicates that the water has a small amount of color and turbidity, that it is rather hard and that it contains a moderate amount of nitrogen and a rather high amount of chlorine. The bacterial counts are almost invariably high, but this may be due in part to delay in the transmission of samples. Bacteria of the colon type, however, are usually present in the 10 c.c. samples, often present in the 1 c.c. samples and occasionally present in the 1/10 c.c. samples, indicating active contamination with fecal organisms.

A careful inspection of the watershed tributary to the Seagar and Bradley springs failed to show any source of human pollution, except that the Erie Railroad crosses the upper part of the watershed tributary to the Seagar spring. The only habitation on this watershed is a farm house, distant at least one-half mile from the spring, and it is not certain that the surface drainage from the farm buildings flows toward the spring. It seems more probable that the contamination is of animal origin and is derived from a pasture located just above the spring lot. This pasture has been recently used and, when inspected, a considerable amount of horse manure was found along the brook within a few hundred feet of the springs. There are no habitations on the watershed tributary to the Bradley spring, and the only source of contamination at this place appears to be the pasture land with which it is surrounded. Some attempt has been made to protect these springs by surface ditches, but they are not deep enough and do not extend entirely around the upper side of the spring lot. The sanitary condition of these sources of supply, while not dangerous, cannot be considered satisfactory at the present time. They can, however, be made reasonably satisfac-

tory by preventing the contamination of the springs from surface pollution and from pollution by domestic animals.

At the Seager spring the present wooden collecting basin should be replaced by a tight masonry basin with sides high enough to prevent the entrance of surface water during periods of high water in the brook and an additional line of collecting tile should be laid further away from the the brook, replacing the present line, which has become somewhat clogged with sand and gravel. All the pasture land between the present spring lot and the divide between the west branch of the Keshequa creek and the head waters of the Canaseraga creek, amounting to perhaps 3 or 4 acres, should be purchased by the village and tightly fenced to prevent the entrance of domestic animals.

At the Bradley spring new diversion ditches should be constructed along the entire upper side of the spring lot in such manner as to completely prevent the flow of surface water from adjacent farm lands onto the spring lot, and the lot should be tightly fenced to prevent the entrance of domestic animals.

Fire protection in the village is maintained by two volunteer fire companies provided with a chemical wagon, a hook and ladder wagon and about 1500 feet of hose. The distribution system is provided with 44 fire hydrants, fairly well placed throughout the village. The static pressure between the distribution reservoir and the central part of the village is about 75 pounds, but this is ordinarily reduced to about 50 pounds by means of a reducing valve. The pressure is purposely kept low to prevent the blowing out of the old wood stave pipe in the distribution system. The chief danger from fire lies in the large amount of wood pipe in the distribution system and especially in the old wood pipe in the supply line from the distribution reservoir. When the reservoir is full there is sufficient storage to supply four standard fire streams for about three hours, but, as it is at times necessary to draw upon the stored water in the reservoir to supply the ordinary needs of the village, the reservoir is not always kept full. For proper fire protection the capacity of the reservoir should be increased to such an extent that there will at all times be a reserve supply of not less than 180,000 gallons.

The price paid by the village for this waterworks system is \$26,000. This amount does not appear unduly high for the properties purchased, but there is little information available as to the present condition of the distribution system. The value of the system was estimated by the above mentioned committee on April 7, 1917 to be \$26,285.50, exclusive of water rights. The appropriation of \$26,000 was entirely used in making payment to the Nunda Water Works Company. Further appropriations will, therefore, be required to make necessary changes and improvements.

There appears to be no reason to doubt the safety of any of the structures, except the old wood stave pipe in the distribution system and in the supply line. The village will be required to replace the wood stave pipe in the supply line with cast-iron pipe.

No additional land appears to be necessary, except that the above mentioned pasture land, lying immediately above the Seager spring should be purchased for the sanitary protection of the spring.

There are several possible alternate sources of supply, but none of these appears to be so advantageous as the one now in use.

The purchase of this waterworks system by the village will not adversely affect the water supply interests of any other community of the State.

The legal damages which may be caused by the execution of the plans of the petitioner do not appear to be such as to require any special consideration or legislative enactment in order that they may be equitably determined and paid.

In consideration of the above, and subject to the modifications hereinafter stated, the Commission finds and determines:

First. That the plans proposed are justified by public necessity.

Second. That the said plans, as hereinafter modified, provide for the proper and safe construction of all work connected therewith.

Third. That the said plans provide for the proper protection of the supply and the watershed from contamination and that filtration is at the present time unnecessary.

Fourth. That said plans are just and equitable to the other municipalities and civil divisions of the State affected thereby and to the inhabitants thereof, particular consideration being given to their present and future necessities for sources of water supply.

Fifth. That said plans make fair and equitable provisions for the determination and payment of any and all legal damages to persons and property, both direct and indirect, which will result from the execution of said plans or the acquiring of said lands.

Provided, however, that the said application, maps and plans as submitted shall be modified and the Commission does hereby determine that they be modified and that the work done thereunder be subject to the following conditions:

1. A suitable ditch or ditches shall be constructed around the upper side of the Bradley spring lot in such manner that all surface water from surrounding lands shall be prevented from flowing onto the spring lot, and the said lot shall be tightly fenced in such manner as to exclude all domestic animals.

2. The present plank collecting basin at the Seager spring shall be replaced with a tight masonry basin with sides of sufficient height to at all times prevent the entrance of surface water, and the spring lot shall be tightly fenced in such manner as to exclude all domestic animals.

3. No water shall be taken from the spring near the bank of Keshequa creek within the village, unless such water shall first be purified by filtration or otherwise in a manner satisfactory to this Commission.

4. All wood pipe in the supply line between the distribution reservoir and the distribution system shall be completely replaced with cast-iron pipe not less than 8 inches in diameter.

5. The village of Nunda shall apply to the State Department of Health for rules and regulations for the protection of the sanitary condition of the watershed tributary to the Seager spring and the Bradley spring, shall enact such rules and regulations as may be proposed by the State

Department of Health and thereafter shall diligently enforce such rules and regulations.

6. After these works have been acquired by the village of Nunda and after a reasonable time has been allowed for compliance with the requirements of this decision, the Commission will cause the works to be inspected by its engineers and, if the requirements of this decision have been complied with, a permit to operate will be issued to the village of Nunda in accordance with the provisions of section 523 of the Conservation Law.

Wherefore, the Conservation Commission does hereby approve the said application of the Nunda Water Works Company as thus modified.

IN WITNESS WHEREOF, the Conservation Commission has caused this determination and approval to be signed by the Deputy Commissioner and has caused its official seal to be affixed hereto and has filed the same with all maps, plans, reports and other papers relating thereto in its office in the city of Albany, this 9th day of July, 1918.

CONSERVATION COMMISSION,

A. MACDONALD,

Deputy Commissioner.

Attest: J. J. FARRELL,

Ass't Secretary to the Commission.

WATER SUPPLY APPLICATION NO. 239

VILLAGE OF SCHUYLERVILLE.

The Village of Schuylerville, on May 14, 1918, filed an application for approval of its plans for developing an additional source of water supply, and a public hearing thereon was held in the Village of Schuylerville on June 7, 1918. At this hearing it was shown that the proposed source of supply had for many years been owned by the village, and that its development did not come within the provisions of the Conservation Law. The proceeding was thereupon dismissed.

WATER SUPPLY APPLICATION NO. 240

STATE OF NEW YORK — CONSERVATION COMMISSION.

<p style="text-align: center;">In the Matter of the</p> <p>Application of the WESTBURY WATER DISTRICT, for the approval of its project for the enlarge- ment of its present water supply system.</p>	} Decision.
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Application filed September 13, 1918.

Hearing held in Westbury, September 28, 1918.

Decision, November 12, 1918.

Approved.

H. E. Hawxhurst, John A. McKenna and John J. White, Water Commissioners of the Westbury Water District, acting on behalf of the said district, on September 6, 1918, made application to the Conservation Commission for its approval of the acquisition by the said district of an additional source of water supply. This application was filed in the office of the Conservation Commission on September 13, 1918. On September 28, 1918, the Commission caused the site of the proposed works and the proposed source of additional water supply to be inspected by one of its engineers.

After due notice published in the Westbury Times and the Nassau County Gazette, a hearing was held on this petition in Fireman's Hall in the unincorporated village of Westbury on September 28, 1918, at 11:00 o'clock in the forenoon. At this hearing the Commission considered the petition, maps and plans submitted, examined witnesses and heard arguments for the project, as shown by the minutes. The petitioner was represented by J. Edward Downing, Esq., Attorney for the village. No objections were filed and no one appeared in opposition.

This Commission is asked to approve of the acquisition by the Westbury Water District of an additional source of water supply to augment the supply of water now furnished to the inhabitants of the said district. It is proposed to sink two new wells on a plot of ground lying adjacent to and immediately south of the land on which the existing wells and pumping plant are located. Water from the two new wells is to be pumped by an air lift system into a concrete collecting reservoir, from which it is to be elevated to the existing standpipe by means of a vertical triplex pump operated by a gas engine. The new pumping machinery is to be housed in an addition to the existing pump house.

After due study of the petition and its exhibits, the evidence and arguments given at the hearing and the report of the engineers of the Commission on this application, it appears that the Westbury Water District was organized under the provisions of the Town Law on February 9, 1911, and now exists as a municipal corporation. It is located in the eastern part of the town of North Hempstead, Nassau county, and is traversed by the Long Island Railroad. The population was about 2200 in 1910, and it is now estimated at about 4000. The assessed valuation of all taxable property within the district, according to the last assessment roll, was \$3,299,810.

The outstanding bonded indebtedness amounts to \$48,000, all of which was incurred for water supply purposes.

The project for making the proposed addition to the present water supply system was initiated by petition to the Board of Water Commissioners from the owners of more than fifty per cent of the taxable real estate situated within the district. After due notice a hearing on this petition was held by the Board of Water Commissioners on August 5, 1918, and on the same date the petition was approved by the said Board of Water Commissioners and was presented to the Town Board of the Town of North Hempstead for its approval. The petition was received and approved by the said Town Board on August 5, 1918. Application to the Conservation Commission for its approval of this project was authorized by resolution of the said Board of Water Commissioners adopted September 6, 1918. The expenditure of not more than \$25,000 for the proposed improvements was authorized by the above proceedings.

Oscar Darling, a consulting engineer having an office in New York City, has been engaged to prepare plans and to supervise the construction of the proposed improvements.

The present water supply of the district is derived from the underground waters of Long Island and is obtained by means of two driven wells said to be about 100 feet deep. From these wells water is pumped to an elevated steel tank having a capacity of about 100,000 gallons and a height of about 125 feet above the surface of the ground.

The distribution system consists of about 7 miles of cast-iron pipe from 4 inches to 10 inches in diameter, covering the built-up parts of the district. There are at present 350 services, about 15 of which supply country estates requiring large quantities of water for lawns, fountains and other purposes. It is estimated that about 1800 people in the district obtain their water supply from the public water supply system. The existing water supply system is said to have cost about \$60,000.

When sufficient water is available, reasonably good fire protection is provided by 76 hydrants fairly well distributed over the distribution system. At times, however, when the draft exceeds the capacity of the single pump now in operation, the fire reserve in the standpipe is exhausted and the pressure falls to such an extent that little protection is given. The district is not provided with a sewerage system.

No recent analyses of the water from either of the existing wells are available, but an analysis made by the State Department of Health in October, 1915, indicates that the water at that time was of good sanitary quality and suitable for all domestic purposes. There is no reason to doubt that the water is at present of equally good quality.

During the last year the yield of the existing wells has been steadily falling off and in August of this year it became impossible to obtain water from one of the wells, making it necessary to depend entirely on the other well. The reason for this progressive reduction in the supply of water appears to be the clogging of the wells with sand. The present yield is estimated at about 150,000 gallons per day and the normal pressure in the distribution system with the standpipe full is about 60 pounds, but with only one well in operation it has been impossible at times during the past summer to prevent the depletion of the water stored in the standpipe and the consequent reduction in pressure in the distribution system. It is said that at times the pressure

in the mains has fallen to barely 20 pounds. The growth of population in the district during the past few years indicates that the demand for water will increase rapidly in the future. The engineer for the district estimates that within ten years it will be necessary to provide at least 300,000 gallons per day.

The proposed additional source of supply consists of two new 8-inch wells, to be driven on a plot of ground just south of the existing plant. From these two wells, it is estimated by the engineer for the district, that from 400,000 to 500,000 gallons of water per day will be made available. As the wells have not yet been driven, it has been impossible to determine the quantity or quality of the water which will be obtained therefrom. If these wells, however, are properly protected from clogging by sand, there appears to be no reason to doubt that the estimated quantity of water will be obtained. The water from the new wells should be similar in quality to that from the existing wells and, as water from this type of well has been found generally satisfactory on Long Island, there appears to be no reason to doubt that it will be suitable for all domestic purposes.

The sanitary condition of the premises was good on the date of inspection. There were no visible sources of pollution, except a privy perhaps 100 feet easterly and on the opposite side of the street from the site of the new wells. It is not probable that pollution from this source will reach the wells, but the district officials should see that the privy is properly cared for and emptied at proper intervals.

The new wells are to be driven to a depth of about 200 feet and water is to be pumped from them by an air lift system to a collection reservoir midway between the two wells. This reservoir is to be a covered concrete structure, 20 by 30 feet in plan and 12 feet deep. Water will be elevated to the existing standpipe by means of a triplex plunger pump.

The mechanical equipment is to consist of a 16-inch by 12-inch air compressor having a capacity of 260 cubic feet of free air per minute, operated by a 50 horsepower horizontal gas engine, and one vertical triplex power pump having a capacity of 400 gallons per minute, operated by a 35 horsepower horizontal gas engine, together with necessary couplings, piping and other appurtenances. Gas for operating the engines will be supplied by the existing producer gas plant. The new machinery is to be housed in a 22-foot by a 42-foot addition to the existing building.

No purification is provided and, if the wells are properly protected from surface pollution, none appears to be necessary. Fire protection will be considerably improved by the additional pumping capacity to be installed.

It has been estimated by the engineer for the district that the proposed additional works can be constructed for \$24,614. This estimate appears to be reasonable, and it appears that sufficient funds are available for carrying out this project.

All machinery to be installed in the proposed improvements is to be similar to that in the present plant, which has been found satisfactory. There appears to be no reason to question its safety. The new building is to be similar in construction to the existing building. About one-quarter of an acre of additional land will be required and it is stated by the district officials that an option on this land has already been obtained.

Deep wells appear to be the logical and, in fact, the only available source of water supply for this district. Nearly all communities on Long Island,

except the city of Brooklyn, derive their water supply from underground waters by means of wells.

It does not appear that the construction of these improvements will adversely affect the water supply interests of any other community or civil division of the State.

The legal damages which may be caused by the execution of the plans of the petitioner do not appear to be such as to require any special consideration or legislative enactment in order that they may be equitably determined and paid.

In consideration of the above and subject to the modifications hereafter stated the Commission therefore finds and determines:

First. That the plans proposed are justified by public necessity.

Second. That said plans provide for the proper and safe construction of all work connected therewith.

Third. That said plans provide for the proper protection of the supply and the watershed from contamination and that filtration is at the present time unnecessary.

Fourth. That said plans are just and equitable to the other municipalities and civil divisions of the State affected thereby and to the inhabitants thereof, particular consideration being given to their present and future necessities for sources of water supply.

Fifth. That said plans make fair and equitable provisions for the determination and payment of any and all legal damages to persons and property, both direct and indirect, which will result from the execution of said plans or the acquiring of said lands.

Provided, however, that the said application, maps and plans as submitted shall be modified and the Commission does hereby determine that they be modified and that the work done thereunder be subject to the following conditions:

1. All work proposed in this application shall be completely constructed in accordance with plans and specifications which have been submitted to and approved by this Commission.

2. After these works have been constructed, they shall be inspected by and be subject to the approval of this Commission, and such works shall not be operated until permit to do so has been issued by this Commission, as provided by section 523 of the Conservation Law.

Wherefore, the Conservation Commission does hereby approve the said application of the Westbury Water District as thus modified.

IN WITNESS WHEREOF, the Conservation Commission has caused this determination and approval to be signed by the Commissioner and has caused its official seal to be affixed hereto and has filed the [L. S.] same with all maps, plans, reports and other papers relating thereto in its office in the city of Albany, this 12th day of November, 1918.

CONSERVATION COMMISSION,

GEO. D. PRATT,

Commissioner.

Attest: J. J. FARRELL,

Ass't Secretary to the Commission.

PERMITS TO OPERATE WATER SUPPLY SYSTEMS

The following completed structures and water supply systems, applications for which had previously been approved, have been approved as to safety and permits to operate the same issued:

No.	Applicant	Application approved	Permit to operate
101.	City of New York.....	June 3, 1912	Sept. 16, 1918
116.	Village of Mount Morris.....	Dec. 7, 1912	April 9, 1918
134.	Village of Honeoye Falls.....	Feb. 24, 1913	May 6, 1918
155.	Village of Franklin.....	May 18, 1914	Oct. 1, 1918
192.	Village of Hilton.....	July 22, 1915	Oct. 21, 1918
219.	Village of Red Creek.....	July 17, 1916	May 21, 1918
220.	Consolidated Water Company of Suburban New York.....	Oct. 3, 1916	July 3, 1918
221.	Village of Cazencovia.....	Oct. 4, 1916	May 21, 1918
222.	Albertson Water District.....	Dec. 15, 1916	July 27, 1918
228.	Village of Sherburne.....	Mar. 10, 1917	Nov. 15, 1918

SEWERAGE APPLICATIONS

The following list indicates the action taken on all sewerage applications filed with this Commission during the year 1918.

No.	Applicant	Approved by State Department of Health	Approved by Conservation Commission
681.	White Plains, city of, extensions in Linton place and Glen, Brookdale and Holland avenues...	Jan. 14, 1918	Mar. 13, 1918
682.	Sloan, village of, amended plans for sewerage...	Jan. 14, 1918	Jan. 28, 1918
683.	Endicott, village of, sewerage.....	Jan. 14, 1918	May 7, 1918
684.	Endicott-Johnson & Co., wastes disposal.....	Jan. 14, 1918	May 7, 1918
685.	Northern Sanitary Co., amended plans.....	Jan. 24, 1918	April 16, 1918
686.	Eastern Tanners Glue Co., wastes disposal.....	Jan. 24, 1918	May 7, 1918
687.	Aurora Condensed Milk Co., Potsdam, creamery wastes.....	Feb. 8, 1918	July 9, 1918
688.	Carthage, village of, sewerage and sewage disposal.....	Feb. 27, 1918	July 9, 1918
689.	Glens Falls, city of, sewerage and sewage disposal.....	Feb. 27, 1918	April 3, 1918
690.	West Seneca, town of, sewers in district No. 2...	Mar. 4, 1918	Pending
691.	Buffalo, barge canal terminal, sewage disposal..	Mar. 4, 1918	Mar. 19, 1918
692.	National Aniline and Chemical Co., Inc., sanitary sewage from works at Wappingers Falls.....	Mar. 4, 1918	Oct. 10, 1918
693.	Herkimer County Tuberculosis Hospital, sewage disposal.....	Mar. 13, 1918	Mar. 28, 1918
694.	Binchampton State Hospital, sewage pumping station.....	Mar. 13, 1918	April 25, 1918

No.	Applicant	Approved by	Approved by
		State Department of Health	Conservation Commission
695.	Sing Sing Prison, sewerage and sewage disposal..	Feb. 8, 1918	Mar. 19, 1918
696.	Larchmont, village of, intercepting sewers and sewer extensions.....	April 8, 1918	April 22, 1918
697.	Binghamton, city of, sewer extensions in Louisa, Gaylord and State streets.....	April 16, 1918	April 25, 1918
698.	Castleton, village of, sewerage and sewage dis- posal.....	April 17, 1918	May 4, 1918
699.	Ayrmont Dairy Co., Inc., Fort Jackson, creamery wastes.....	April 23, 1918	May 28, 1918
700.	Rossville Silk Mills Co., sewage disposal.....	April 23, 1918	May 23, 1918
701.	Webster Canning and Preserving Co., wastes dis- posal.....	April 25, 1918	May 15, 1918
702.	United States Government Hospital No. 8, sew- age disposal.....	April 25, 1918	May 2, 1918
703.	Binghamton, city of, extension in Beman street..	May 6, 1918	May 21, 1918
704.	New York, Westchester and Boston Railroad Company, disposal plant.....	May 6, 1918	May 21, 1918
705.	Croton Color and Chemical Co., wastes disposal.	May 16, 1918	June 1, 1918
706.	Binghamton, city of, extensions in Walnut street and Walnut place.....	May 14, 1918	June 1, 1918
707.	Lake Mahopac High School, sewage disposal...	May 15, 1918	June 20, 1918
708.	Binghamton, city of, extension in Janette avenue.	May 24, 1918	June 1, 1918
709.	Borden's Farm Products Co., Inc., Locke, N. Y., creamery wastes.....	May 31, 1918	June 25, 1918
710.	Bronxville, village of, extensions in Pondfield avenue, Northway, Northwestway and West- way.....	May 28, 1918	June 17, 1918
711.	Ogdensburg, city of, extension in Lafayette street.....	May 29, 1918	June 20, 1918
712.	Bronxville, village of, sewer extensions.....	May 28, 1918	June 17, 1918
713.	Hempstead, town of, sewage disposal from Bell- more school.....	June 5, 1918	July 9, 1918
714.	Hempstead, town of, sewage disposal from Merrick school.....	June 5, 1918	July 9, 1918
715.	Nassau County Tuberculosis Hospital, water supply and sewage disposal.....	June 6, 1918	June 20, 1918
716.	Albany Perforated Wrapping Paper Co., sewage and trade wastes.....	June 15, 1918	July 9, 1918
717.	Richardson-Beebe Co., wastes disposal.....	June 11, 1918	July 10, 1918
718.	Borden's Farm Products Co., Inc., Savona, wastes disposal.....	June 11, 1918	July 10, 1918
719.	Borden's Farm Products Co., Inc., Kanona, wastes disposal.....	June 11, 1918	July 10, 1918
720.	Richardson-Beebe Co., wastes disposal.....	June 18, 1918	Pending
721.	Curtiss Aeroplane and Motor Corp., Hammonds- port, N. Y., sewage disposal.....	June 27, 1918	July 22, 1918

No.	Applicant	Approved by State Department of Health	Approved by Conservation Commission
722.	Sheffield Farms-Slawson-Decker Co., wastes disposal.....	July 11, 1918	Nov. 12, 1918
723.	Valeria Home, Westchester county, sewage disposal.....	July 15, 1918	July 29, 1918
724.	Sing Sing, sewerage system.....	Inc. in sewerage application No. 695	
725.	Valley Falls, village of, sewerage system.....	July 24, 1918	Sept. 13, 1918
726.	Rockland County Tuberculosis Hospital, sewage disposal.....	July 24, 1918	Dec. 16, 1918
727.	Williamson High School, sewage disposal.....	July 24, 1918	Aug. 20, 1918
728.	Port Jefferson Sewer District, sewerage and sewer district.....	July 30, 1918	{ Aug. 28, 1918 and Oct. 10, 1918
729.	Montgomery County Tuberculosis Hospital, sewage disposal.....	July 29, 1918	Sept. 13, 1918
730.	Columbia County Tuberculosis Hospital, sewage disposal.....	July 30, 1918	Sept. 13, 1918
731.	Gardenville High School, sewage disposal.....	July 29, 1918	Sept. 13, 1918
732.	Bronx Farms Co., Inc., Mooers, wastes disposal..	July 29, 1918	Pending
733.	Newton Memorial Hospital, sewerage and sewage disposal.....	Aug. 12, 1918	Sept. 6, 1918
734.	Brooklyn State Hospital, Creedmore Division, sewage disposal.....	Aug. 12, 1918	Sept. 6, 1918
735.	Central Islip State Hospital, sewage disposal....	Aug. 12, 1918	Sept. 6, 1918
736.	Watertown, city of, extensions in Katherine and other streets.....	Aug. 21, 1918	Sept. 13, 1918
737.	Catskill, village of, sewerage and sewage disposal.	Aug. 21, 1918	Sept. 13, 1918
738.	Ogdensburg, city of, extension in Patterson street.	Aug. 28, 1918	Sept. 13, 1918
739.	Parma, town of, Union Free School District No. 4, sewage disposal.....	Aug. 28, 1918	Sept. 27, 1918
740.	Theresa, village of, sewage disposal for Theresa High School.....	Aug. 28, 1918	Sept. 13, 1918
741.	White Plains, city of, extensions in Thompson avenue and Clinton street and Lenox avenue..	Oct. 1, 1918	Oct. 10, 1918
742.	Gloversville, city of, intercepting sewers and disposal works.....	Oct. 1, 1918	Dec. 6, 1918
743.	Pierce-Arrow Motor Car Co., town of Tonawanda, sewage disposal.....	Oct. 3, 1918	Oct. 18, 1918
744.	Ilion, village of, sewers in Cross, Grove and Ward streets.....	Oct. 15, 1918	Oct. 26, 1918
745.	Ballston Spa, village of, extension in Chester street.....	Oct. 16, 1918	Oct. 28, 1918
746.	Rotterdam, town of, School District No. 3, sewage disposal.....	Oct. 16, 1918	Dec. 12, 1918
747.	Union Free School at Broadalbin, sewage disposal.....	Oct. 23, 1918	Dec. 6, 1918

No.	Applicant	Approved by State Department of Health	Approved by Conservation Commission
748.	Sodus High School, sewage disposal.....	Oct. 23, 1918	Nov. 19, 1918
749.	Century Country Club of White Plains, sewage disposal.....	Oct. 24, 1918	Nov. 19, 1918
750.	Ontario County Tuberculosis Hospital, sewage disposal.....	Oct. 24, 1918	Dec. 6, 1918
751.	Braeburn Woolen Co., sewage disposal.....	Oct. 25, 1918	Nov. 19, 1918
752.	Commonwealth Chemical Corporation, wastes disposal.....	Oct. 28, 1918	Nov. 14, 1918
753.	Delaware County Tuberculosis Hospital, sewage disposal.....	Oct. 31, 1918	Nov. 19, 1918
754.	Borden's Farm Products Co., New Bremen, creamery wastes.....	Nov. 2, 1918	Nov. 19, 1918
755.	Ogdensburg, city of, extension in Isabella street..	Nov. 8, 1918	Nov. 19, 1918
756.	Fieldman, Samuel, wastes disposal.....	Nov. 15, 1918	Dec. 6, 1918
757.	Tonawanda, town of, Sewer District No. 1, sewage disposal.....	Nov. 18, 1918	Dec. 16, 1918
758.	Sullivan County Creamery Co., wastes disposal..	Nov. 20, 1918	Dec. 6, 1918
759.	Northampton, town of, Sewer District No. 4, sewage disposal.....	Nov. 18, 1918	Dec. 2, 1918
760.	Canistota-Tanning Co., Inc., wastes disposal....	Nov. 27, 1918	Pending
761.	Newburgh, city of, sewers in Norton, Bush, Third and other streets.....	Oct. 30, 1918	Pending
762.	Beakes Dairy Co., wastes disposal.....	Dec. 31, 1918	Pending
763.	Fulton County Tuberculosis Hospital, sewage disposal.....	Dec. 16, 1918	Pending

APPENDIX B

PROGRESS REPORT ON HYDROGRAPHIC INVESTI- GATIONS CARRIED ON IN COOPERATION WITH THE UNITED STATES GEOLOGICAL SURVEY

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

ALBANY, N. Y., *January 2, 1919.*

HON. GEORGE D. PRATT, *Commissioner State of New York Conservation Commission, Albany, N. Y.:*

DEAR SIR,— Transmitted herewith is a report on the hydro-metric work carried on by the U. S. Geological Survey in cooperation with the State of New York, for the water year ending September 30, 1918.

The work has been done in cooperation with your department and with the State Engineer and Surveyor, under the general supervision of Mr. N. C. Grover, chief hydraulic engineer, and Mr. John C. Hoyt, engineer in charge of the division of waters for the Geological Survey.

The accompanying report was prepared by Mr. O. W. Hartwell, assistant engineer, assisted by Mr. E. D. Burchard, assistant engineer, and Mr. Max H. Carson, junior engineer. The field data were largely collected by Mr. E. D. Burchard and Mr. J. Wendell Moulton.

Acknowledgments are due engineers of the division of waters of your department, and engineers of the bureau of hydraulics of the State Engineer's office, for assistance rendered in field and office.

Very truly yours,
C. C. COVERT,
District Engineer.

**PROGRESS REPORT OF HYDROGRAPHIC WORK
CARRIED ON BY
THE UNITED STATES GEOLOGICAL SURVEY
IN CO-OPERATION WITH THE STATE OF NEW YORK
GENERAL STATEMENT**

During the year ending June 30, 1918, there was considerable interruption to the work because of war-time conditions. Some of the men were in training camps, and one junior engineer, Mr. A. H. Davison, was commissioned first lieutenant in the 303d engineers for service in France. We also experienced considerable difficulty in securing labor and material. Prices were abnormally high and the policy necessarily adopted was to maintain only those stations already established, and to start no new work. These conditions, together with the fact that a portion of the appropriation was under the budget system made it impossible to use up the entire allotment. The appropriations and expenditures for the work were as follows:

<i>Appropriations</i>	
State of New York Conservation Commission	\$10,000
State Engineer and Surveyor	2,500
United States Geological Survey	3,500
	<hr/> \$16,000.00
<i>Expenditures</i>	
State of New York Conservation Commission	\$8,859 30
State Engineer and Surveyor	2,172 19
United States Geological Survey	3,601 67
	<hr/> 14,633.16
Unexpended balance	<hr/> \$1,336.84

SCOPE OF WORK

There were maintained during the year 48 stations from which discharge estimates are published, giving a total of 586 months' records, or an average of 10.9 months per station. The total number of discharge measurements made was 371, or an average

of 7.5 measurements per station of 12 months' records. The total cost per station of 12 months' records was \$313.99, or an average of \$26.17 per month's record.

PRINCIPAL ITEMS OF COST

Observers' pay	\$1,847.19
Operation and maintenance	5,070.12
Construction	715.31
Office work	3,151.38
Top cost	3,139.82
Non-expendable property	709.34
	<hr/>
	\$14,633.16
	<hr/>

The appropriations available for 1918-19, are as follows:

State of New York Conservation Commission	\$10,000.00
State Engineer and Surveyor	2,500.00
United States Geological Survey	4,000.00
	<hr/>
	\$16,500.00
	<hr/>

Three new stations were established during July:

Tioga River near Erwins.

Cohocton River near Campbell.

Mud Creek near Savona.

The stations were established by the Lamoka Electric Power Corporation under the direction of the Geological Survey, and are being maintained by the Survey in cooperation with the State of New York.

The records published in this report are for the water year ending September 30, 1918.

The outstanding feature for the year was the low water in January. The mean for this month was very near the minimum for the year and the lowest January on record.

Ice conditions began to form in the "North Country" the last of November, and they steadily increased up to about the first of February when there was a slight disturbance. The ice did not go out, however, until about April 1st.

In the southern part of the State back water from ice obstruction began to appear early in December. The warm wave the

first of January started the ice to move, but it was soon checked and did not break up until the last of February.

HUDSON RIVER NEAR INDIAN LAKE

Location.—About 1 mile below the mouth of Cedar river, 1½ miles above the mouth of Indian river and 6 miles northeast of Indian Lake village, Hamilton county.

Drainage area.—418 square miles (measured on U. S. G. S. topographic maps).

Records available.—August 30, 1916, to September 30, 1918.

Gage.—Gurley printing water stage recorder on right bank. Inspected by John A. Bolton.

Discharge measurements.—Made from cable about 100 yards below gage, or by wading.

Channel and control.—Solid ledge overlain with coarse gravel; probably permanent.

Extremes of discharge.—Maximum stage during year from water-stage recorder, 9.08 feet at 6:30 A. M., May 19; discharge, 8,960 second-feet; minimum discharge, 80 second-feet. February 7, stage-discharge relation affected by ice.

1916-1918: Maximum stage from water-stage recorder, 9.87 feet at 11 A. M., June 12, 1917; discharge, 13,500 second-feet; minimum stage from water-stage recorder, 1.43 feet from 11 A. M., Sept. 11, to 8 A. M., Sept. 13; discharge, 56 second-feet.

Ice.—Stage-discharge relation affected by ice.

Regulation.—Large diurnal fluctuation due to logging operations during the spring months. Seasonal distribution of flow slightly affected by storage.

Accuracy.—Stage-discharge relation practically permanent; affected by ice from December to March and by logs during October, November and the latter part of June. Rating curve fairly well defined between 75 and 600 second-feet, and well defined between 600 and 6,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table except when fluctuation required mean of hourly discharge. Results good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Hudson River near Indian Lake, during the year ending September 30, 1918

Date	Made by	Gage height	Discharge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 13 a.....	E. D. Burchard.....	2.52	175
Jan. 7 a.....	J. W. Moulton.....	2.90	111
31 a.....	E. D. Burchard.....	3.07	133
Feb. 27 a.....	J. W. Moulton.....	4.84	851
Mar. 22 b.....	do.....	4.97	1,071
April 3 c.....	do.....	6.37	4,910
29 c.....	do.....	4.34	1,830
30.....	E. D. Burchard.....	3.14	987
30.....	J. W. Moulton.....	3.21	1,070
June 21.....	do.....	2.22	338
July 14.....	do.....	2.78	698

a Measurement made through complete ice cover.

b Measurement made through partial ice cover.

c Log jam on the control.

Daily discharge, in second-feet, of Hudson River at Indian Lake, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	309	3,630	260	130	100	900	3,000	4,730	295	313	216	195
2.....	418	2,820	280	130	95	850	3,800	2,920	1,350	524	229	224
3.....	379	1,990	280	130	120	800	5,000	4,050	686	482	234	336
4.....	319	1,420	280	120	140	750	4,800	3,170	1,320	562	211	290
5.....	366	1,200	260	120	120	700	4,400	2,030	445	595	195	252
6.....	565	990	240	120	90	650	3,430	1,450	1,140	500	187	247
7.....	595	990	240	110	80	650	3,000	1,810	884	428	171	379
8.....	595	838	220	140	85	600	2,800	2,930	1,190	383	167	434
9.....	565	568	200	120	90	600	2,800	2,400	1,530	351	175	372
10.....	506	429	200	150	100	600	2,660	2,850	3,730	356	238	305
11.....	449	595	200	180	120	650	2,280	2,210	1,280	405	440	247
12.....	368	924	190	180	150	650	1,920	2,870	1,270	530	440	211
13.....	477	595	170	200	200	1,000	1,750	1,520	1,540	665	367	203
14.....	535	355	170	220	200	1,000	1,640	2,280	1,540	735	315	211
15.....	595	291	170	220	240	1,000	1,390	2,370	1,640	735	252	199
16.....	660	582	160	280	240	900	2,040	1,890	1,400	595	238	224
17.....	800	683	160	280	240	900	2,600	1,550	890	530	183	280
18.....	730	506	160	280	280	900	3,400	530	665	500	157	361
19.....	628	506	150	280	300	900	3,200	2,750	506	446	146	688
20.....	695	505	150	280	340	900	2,400	440	405	399	142	772
21.....	875	389	150	280	380	950	1,900	1,350	372	356	135	735
22.....	912	344	150	260	440	1,100	2,200	341	356	315	128	810
23.....	800	320	150	260	500	1,400	4,600	1,260	341	276	132	772
24.....	730	280	150	260	550	1,900	2,600	280	351	247	125	700
25.....	875	280	150	240	550	2,200	1,600	1,240	378	229	122	770
26.....	950	260	150	220	600	2,400	1,600	346	367	211	115	735
27.....	912	240	140	200	850	2,400	850	1,130	315	191	109	1,060
28.....	1,030	240	140	170	900	2,200	1,200	522	295	171	102	1,290
29.....	1,110	260	130	170	.....	2,200	2,800	1,410	285	160	102	1,290
30.....	2,290	260	130	170	.....	2,200	2,100	367	285	203	102	1,240
31.....	4,710	.....	130	130	.....	2,800	.....	1,420	.....	247	105	.....

NOTE.— Discharge November 23 to April 4 estimated, because of ice, and discharge April 18–30 estimated because of logs on the control, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Hudson River at North Creek.

Monthly discharge of Hudson River near Indian Lake for the year ending September 30, 1918
[Drainage area, 418 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	4,710	309	831	1.99	2.29
November.....	3,630	240	779	1.86	2.08
December.....	280	130	184	.440	.51
January.....	280	110	195	.467	.54
February.....	900	80	289	.691	.72
March.....	2,800	600	1,210	2.89	3.33
April.....	5,000	850	2,660	6.36	7.10
May.....	4,730	280	1,820	4.35	5.02
June.....	3,730	285	902	2.16	2.41
July.....	735	160	408	.976	1.13
August.....	440	102	193	.462	.53
September.....	1,290	195	528	1.26	1.41
The year.....	5,000	80	834	2.00	27.07

HUDSON RIVER AT NORTH CREEK

Location.—At the two-span steel highway bridge in the village of North Creek, Warren county, immediately above the mouth of North creek.

Drainage area.—804 square miles.

Records available.—September 21, 1907, to September 30, 1918.

Gage.—Chain at up-stream side of left span of the bridge; datum unchanged; read by William Alexander.

Discharge measurements.—Made from the up-stream side of the highway bridge.

Channel and control.—Heavy gravel; fairly permanent.

Extremes of discharge.—Maximum stage recorded during year, 7.65 feet at 6 P. M., April 3; discharge, 11,100 second-feet; minimum stage, 2.25 feet at 8 A. M., July 24; discharge, 302 second-feet.

1907–1918: Maximum stage recorded, 12.0 feet during the evening of March 27, 1913; (discharge, about 30,000 second-feet); minimum stage, 2.05 feet at 7:05 A. M., September 30, 1913; (discharge, 168 second-feet.)

Ice.—Stage-discharge relation affected by ice.

Regulation.—The numerous lakes and ponds in the basin of the upper Hudson have a decided effect on the low water flow; especially the reservoir at Indian lake. Many of the reservoirs are used to make flood waves in the spring in connection with log driving.

Accuracy.—Stage discharge relation practically permanent; affected by ice from December to March, inclusive. Rating curve well defined between 250 and 6,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good during open water period; fairly good during period when stage-discharge relation is affected by ice.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Hudson River at North Creek, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 12 <i>b</i>	E. D. Burchard.....	4.22	890
Jan. 5 <i>b</i>	J. W. Moulton.....	4.40	599
Feb. 1 <i>a</i>	E. D. Burchard.....	4.64	626
28 <i>a</i>	J. W. Moulton.....	5.54	1,520
Mar. 24 <i>a</i>	do.....	7.10	2,710
April 4.....	do.....	6.22	6,880
May 2.....	E. D. Burchard.....	4.15	2,460
June 20.....	J. W. Moulton.....	2.66	588
July 13.....	do.....	3.76	1,770

a Measurement made through complete ice cover.

b Measurement made through partial ice cover.

Daily discharge, in second-feet, of Hudson River at North Creek, for the year ending September 30, 1913

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	990	5,840	750	700	550	1,400	4,890	6,340	610	404	790	990
2.....	1,100	4,010	750	650	500	1,400	7,400	5,360	610	610	790	1,040
3.....	1,100	2,870	800	650	550	1,500	10,000	6,090	610	570	790	1,100
4.....	1,100	2,140	800	650	550	1,600	7,680	3,420	5,360	745	790	940
5.....	990	1,760	750	650	500	1,600	6,600	3,050	530	790	1,160	790
6.....	890	1,480	700	650	480	1,600	4,890	1,910	3,230	700	990	790
7.....	840	1,350	700	750	440	1,000	4,890	1,550	460	610	890	890
8.....	790	1,350	650	800	440	1,000	4,440	4,660	1,910	530	790	990
9.....	790	1,280	650	750	440	1,100	4,890	4,220	1,550	530	940	1,100
10.....	700	1,220	650	800	460	1,100	4,440	2,870	6,340	530	990	990
11.....	745	890	950	850	500	1,200	4,010	3,610	2,370	610	1,100	990
12.....	790	890	1,100	850	460	1,400	3,230	2,060	3,050	745	1,100	940
13.....	940	940	1,000	850	600	2,200	2,870	2,870	2,700	1,840	990	890
14.....	940	890	1,000	900	600	2,200	2,530	2,060	2,370	1,620	990	890
15.....	890	495	1,000	900	650	2,000	2,700	1,830	2,530	1,620	890	700
16.....	940	700	1,000	1,000	650	1,900	3,230	4,440	1,980	1,040	840	530
17.....	990	700	1,000	1,000	650	1,900	4,440	2,130	1,220	940	890	570
18.....	1,040	700	1,000	1,000	700	1,900	5,360	1,350	940	890	790	610
19.....	890	700	1,000	1,000	700	2,000	4,890	1,760	745	745	890	990
20.....	990	700	1,000	950	800	2,000	4,890	940	570	610	990	1,100
21.....	1,220	655	800	900	850	2,200	4,010	700	530	610	990	1,100
22.....	1,220	570	700	900	950	2,200	3,230	700	530	530	890	990
23.....	1,100	530	700	850	1,100	2,600	8,520	790	530	330	940	990
24.....	1,100	530	700	800	1,100	2,800	5,600	990	530	319	940	890
25.....	1,420	460	750	850	1,100	3,200	4,220	655	530	700	890	890
26.....	1,620	460	750	850	1,200	4,000	4,440	570	530	790	890	940
27.....	1,550	460	800	750	1,400	5,000	2,060	790	460	655	890	1,620
28.....	1,690	500	800	650	1,600	5,500	1,620	700	460	700	890	1,710
29.....	1,760	500	750	650	.....	5,360	3,230	1,160	378	700	890	1,690
30.....	2,870	700	750	650	.....	4,890	4,890	790	2,210	790	840	1,480
31.....	7,400	.....	700	600	.....	4,440	.....	2,210	.....	890	840	.....

NOTE.— Discharge November 26 to March 28 estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Hudson River near Indian Lake.

Monthly discharge of Hudson River at North Creek, for the year ending September 30, 1913
[Drainage area, 804 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	7,400	700	1,340	1.67	1.91
November.....	5,840	460	1,210	1.50	1.67
December.....	1,100	650	821	1.02	1.18
January.....	1,000	600	800	.995	1.14
February.....	1,600	440	734	.913	.95
March.....	5,500	1,000	2,390	2.97	3.42
April.....	10,000	1,620	4,670	5.81	6.48
May.....	6,340	570	2,340	2.91	3.35
June.....	6,340	378	1,550	1.92	2.14
July.....	1,840	319	764	.950	1.10
August.....	1,160	790	912	1.13	1.30
September.....	1,760	530	1,010	1.26	1.41
The year.....	10,000	319	1,540	1.92	26.06

HUDSON RIVER AT THURMAN

Location.—At the Delaware and Hudson railroad bridge near the Thurman railroad station, Warren county, about ½ mile below the mouth of Schroon river and about 13 miles above the mouth of Sacandaga river.

Drainage area.—1,550 square miles.

Records available.—September 1, 1907, to September 30, 1918.

Gage.—Chain at up-stream side near center of left span; datum unchanged; read by S. H. Spencer and L. J. Love.

Discharge and measurements.—Made from up-stream side of bridge.

Channel and control.—Sand and gravel; fairly permanent. Logs occasionally lodge on a small island on the control.

Extremes of discharge.—Maximum stage recorded during year, 7.28 feet in the afternoon, April 23; (discharge, 14,800 second-feet); minimum stage recorded, 2.4 feet in the morning, July 28; (discharge, 680 second-feet).

1907–1918: Maximum stage, 12.5 feet during the late evening of March 27, 1913, determined by leveling from flood marks; (discharge about 46,000 second-feet); minimum stage recorded, 2.12 feet at 8:55 A. M. and 6:20 P. M., September 30, 1913; (discharge, about 290 second-feet).

Ice.—Stage-discharge relation seriously affected by ice. Discharge determined from records at North Creek and Riverbank.

Regulation.—Discharge is regulated to some extent by the storage reservoirs at Indian lake and Schroon lake and the mills on the Schroon river.

Accuracy.—Stage-discharge relation practically permanent; affected by ice during large part of the period from December to March, inclusive, and by logs during parts of June, July and September. Rating curve well defined between 550 and 20,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good. Estimated results during frozen period fair.

Co-operation.—Gage heights furnished by the International Paper Co. Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Hudson River at Thurman, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
Dec. 16 <i>a</i>	E. D. Burchard.....	5.16	1,570
May 3.....	J. W. Moulton.....	5.41	8,050
June 20.....	do.....	3.14	1,560
July 12.....	do.....	2.82	965

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of Hudson River at Thurman, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1,460	7,760	1,550	.....	.....	.....	11,400	6,780	2,040	850	1,220	1,380
2.....	1,460	6,170	1,460	.....	.....	.....	12,100	7,430	3,590	1,300	1,080	1,460
3.....	1,550	4,420	1,460	.....	.....	.....	14,100	6,780	2,150	1,500	1,150	1,380
4.....	1,380	4,140	1,940	.....	.....	.....	14,100	6,470	4,420	950	1,080	1,380
5.....	1,550	3,590	1,380	.....	.....	.....	12,500	5,000	950	1,100	1,460	1,080
6.....	1,550	3,200	1,550	.....	.....	.....	11,000	4,710	1,550	1,100	1,300	1,080
7.....	1,220	2,960	1,550	.....	.....	.....	10,600	3,860	1,380	950	1,220	1,080
8.....	1,380	2,840	1,460	.....	.....	.....	9,500	5,580	1,220	950	1,220	1,080
9.....	1,080	2,480	1,400	.....	.....	.....	9,860	4,710	1,380	850	1,220	1,550
10.....	1,020	1,940	1,500	.....	.....	.....	9,860	5,290	4,710	850	1,220	1,380
11.....	850	1,740	1,600	.....	.....	.....	8,790	5,290	3,590	850	1,150	1,380
12.....	1,080	1,940	1,800	.....	.....	.....	7,430	5,870	3,080	800	1,460	1,300
13.....	1,300	2,150	1,800	.....	.....	.....	7,430	4,710	4,710	1,700	1,380	1,220
14.....	1,460	1,740	1,700	.....	.....	.....	7,100	6,470	4,140	2,200	1,300	1,460
15.....	1,460	1,740	1,600	.....	.....	.....	6,470	8,100	4,140	2,200	1,300	2,150
16.....	1,300	1,940	1,600	.....	.....	.....	7,430	5,580	3,860	1,700	1,150	850
17.....	1,460	2,040	1,500	.....	.....	.....	7,100	4,140	2,600	1,300	1,080	905
18.....	1,640	1,940	1,500	.....	.....	.....	7,760	3,860	2,370	1,300	905	1,220
19.....	1,380	1,640	1,500	.....	.....	.....	11,400	3,590	2,150	1,200	1,020	1,300
20.....	1,300	1,640	1,400	.....	.....	.....	7,760	3,460	1,840	1,200	1,220	1,550
21.....	1,460	1,740	1,400	.....	.....	.....	8,790	3,330	1,740	1,000	1,380	2,040
22.....	1,940	1,460	1,200	.....	.....	.....	7,430	2,840	2,150	850	1,080	1,740
23.....	1,840	1,460	1,100	.....	.....	.....	11,000	2,480	1,220	800	1,220	1,550
24.....	1,460	1,460	1,100	.....	.....	.....	9,500	2,260	1,220	750	1,300	1,550
25.....	1,940	1,300	1,100	.....	.....	.....	6,170	3,860	1,500	850	1,380	1,380
26.....	2,260	1,080	1,100	.....	.....	.....	7,100	1,550	1,400	1,220	1,150	1,550
27.....	2,150	1,020	1,100	.....	.....	.....	5,290	1,940	1,500	1,020	1,150	2,800
28.....	2,260	905	1,100	.....	.....	.....	5,000	2,260	1,300	680	1,080	2,600
29.....	2,480	1,640	1,100	.....	.....	.....	9,140	4,140	1,300	1,220	1,150	2,400
30.....	3,590	2,150	1,100	.....	.....	.....	8,790	2,150	700	1,220	1,150	2,200
31.....	8,790	.....	1,000	.....	.....	.....	.....	5,000	.....	1,380	1,080	.....

NOTE.— Discharge December 9 to 31 estimated, because of ice, from one discharge measurement, weather records and study of gage height graph. Discharge June 25 to July 24, and September 27-30 somewhat uncertain because of logs on the control.

Monthly discharge of Hudson River at Thurman, for the year ending September 30, 1918
[Drainage area, 1,550 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	8,790	850	1,840	1.19	1.37
November.....	7,760	905	2,410	1.55	1.73
December.....	1,940	1,000	1,410	.910	1.05
January.....	.....	.....	1,150	.748	.86
February.....	.....	.....	940	.606	.63
March.....	.....	.....	3,620	2.34	2.70
April.....	14,100	5,000	9,030	5.85	6.53
May.....	8,100	1,550	4,500	2.90	3.34
June.....	4,710	805	2,330	1.50	1.67
July.....	2,200	680	1,160	.748	.66
August.....	1,460	905	1,200	.774	.89
September.....	2,800	850	1,530	.987	1.10
The year.....	14,100	.....	2,600	1.68	22.73

NOTE.— Mean discharge January, February and March determined from sum of flow at North Creek and Riverbank plus estimated inflow below these stations.

HUDSON RIVER AT SPIER FALLS

Location.—One-half mile below the Spier Falls dam, Saratoga county, and 11½ miles below the mouth of Sacandaga river.

Drainage area.—2,800 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—October 7, 1912, to September 30, 1918.

Gage.—Gurley 2-day water-stage recorder located in a brick shelter five feet square on the right bank about one-half mile below the Spier Falls dam. Recorder inspected by T. F. Malone, chief operator of power plant.

Discharge measurements.—Made from a cable about 1,000 feet down-stream from the gage.

Channel and control.—Coarse gravel and boulders; probably permanent.

Extremes of discharge.—Maximum stage during year from water-stage recorder, 12.16 feet at 8 A. M., April 4; discharge, 34,500 second-feet; minimum stage from water-stage recorder, 0.93 foot at 7 A. M., Sept. 1; discharge, 140 second-feet.

1912–1919: Maximum stage, from water-stage recorder, 18.59 feet at 12:25 A. M., March 28, 1913; (discharge, about 89,100 second-feet); minimum stage,—0.12 foot at 4 P. M., September 23, 1917, observed during current meter measurement; (discharge about 5.5 second-feet).

Ice.—Stage discharge relation not affected by ice, except for a short time during extremely cold periods.

Regulation.—Large diurnal fluctuation in discharge due to the operation of the Spier Falls power plant. Seasonal flow affected by storage at Indian Lake and many small lakes and reservoirs in the upper part of the drainage.

Accuracy.—Stage-discharge relation practically permanent; affected by ice February 2 to 16. Rating curve well defined for all stages except about nine feet where the rating curve may be 4% or 5% large. Operation of the water stage recorder satisfactory throughout the year. Daily discharge ascertained by averaging the results obtained by applying gage heights for one-hour intervals to the rating table. Results good.

Co-operation.—Water stage recorder inspected by an employee of the Adirondack Electric Power Corporation. Station established and maintained by United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Hudson River at Spier Falls, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 3 a.....	J. W. Moulton.....	2.84	1,150
Feb. 2 b.....	E. D. Burchard.....	2.85	1,400
June 18.....	J. W. Moulton.....	4.67	4,990

a Measurement made through complete ice cover.

b Measurement made through partial ice cover.

Daily discharge, in second-feet, of Hudson River at Spier Falls, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1,930	17,700	3,160	1,390	1,330	5,780	21,500	13,500	5,200	1,810	1,480	906
2.....	1,780	15,200	1,020	1,820	2,000	5,350	22,900	13,800	3,800	1,700	1,540	1,940
3.....	1,470	12,600	2,720	1,480	1,240	5,100	31,400	12,600	4,570	2,780	1,120	2,350
4.....	1,860	10,200	1,960	1,480	1,380	4,860	32,300	13,200	3,750	1,590	1,390	1,790
5.....	1,940	8,350	2,220	1,770	1,620	4,750	27,900	11,400	3,870	1,260	1,530	1,690
6.....	2,680	6,950	2,090	727	1,730	4,900	24,200	8,780	2,840	1,510	1,490	1,650
7.....	1,510	5,840	2,310	1,760	1,460	4,340	21,700	7,830	3,400	1,510	1,670	1,530
8.....	1,860	5,160	2,110	1,540	1,350	3,770	20,100	8,320	3,470	1,910	1,430	922
9.....	1,810	4,560	610	1,330	1,650	3,130	21,800	9,600	5,010	1,480	1,590	1,980
10.....	1,600	3,800	1,530	1,300	661	3,090	22,200	10,200	6,500	1,250	1,080	2,060
11.....	1,640	3,370	1,580	1,430	1,460	3,860	21,100	10,200	6,570	1,410	1,600	1,700
12.....	1,630	4,140	1,780	1,440	1,160	2,850	18,900	8,660	4,900	1,850	1,710	1,430
13.....	2,030	3,350	2,130	1,700	1,430	2,770	16,700	9,190	6,700	2,080	1,880	1,770
14.....	1,940	2,980	2,490	1,460	1,380	3,660	14,800	12,800	6,990	2,690	1,680	1,850
15.....	3,250	2,880	2,060	1,310	1,730	4,140	14,000	15,100	6,460	3,690	1,570	725
16.....	2,920	3,040	2,110	1,920	1,660	3,560	14,300	13,400	5,720	2,880	1,840	1,970
17.....	2,990	2,910	2,030	1,840	1,490	3,230	15,200	11,700	4,680	2,470	1,050	1,360
18.....	3,020	2,160	2,450	1,780	1,850	4,230	17,200	9,730	3,930	2,410	1,230	1,410
19.....	2,630	3,280	2,180	1,690	1,790	4,750	20,100	8,280	3,550	2,730	1,810	1,950
20.....	2,760	2,520	2,170	1,050	2,400	5,620	19,000	8,440	3,170	2,240	1,450	2,410
21.....	2,280	2,450	2,480	1,890	2,900	7,030	17,200	6,360	2,840	1,400	1,280	3,390
22.....	4,080	2,260	2,580	1,790	3,150	9,230	18,200	6,210	2,420	1,690	1,430	1,600
23.....	3,270	3,270	1,170	1,730	3,810	12,500	19,400	4,860	1,830	1,480	1,440	2,310
24.....	2,770	3,470	1,990	1,660	4,140	13,500	20,100	5,100	2,970	1,310	606	2,340
25.....	3,240	2,670	1,820	1,660	4,220	15,200	16,300	3,870	2,530	1,330	1,410	2,230
25.....	4,020	2,990	1,870	2,150	4,480	16,200	16,100	4,310	2,390	1,440	1,690	2,620
27.....	4,280	2,010	2,290	740	5,490	15,700	12,600	4,040	2,100	1,480	1,400	5,410
28.....	4,130	2,490	1,980	2,170	6,150	14,800	11,800	4,610	2,030	1,290	1,440	6,100
29.....	5,070	1,130	2,070	1,690	.....	15,100	10,800	4,230	1,720	1,420	1,350	5,350
30.....	10,200	2,510	1,140	1,820	.....	16,700	13,400	4,440	1,490	1,590	1,200	4,650
31.....	17,200	.....	3,060	1,480	.....	18,300	.....	5,200	.....	1,530	1,520	.....

NOTE.— Discharge January 1 to February 15 determined because of ice by comparison with discharge computed from power house records.

Monthly discharge of Hudson River at Spier Falls, for the year ending September 30, 1918
[Drainage area, 2,800 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF Depth in inches on drainage area
	Maximum	Minimum	Mean	Per square mile	
October.....	17,200	1,470	3,350	1.20	1.38
November.....	17,700	1,130	4,870	1.74	1.94
December.....	3,160	610	2,040	.729	.84
January.....	2,170	727	1,580	.564	.65
February.....	6,150	661	2,320	.829	.86
March.....	18,300	2,770	7,680	2.74	3.16
April.....	32,300	10,800	19,100	6.82	7.61
May.....	15,100	3,870	8,710	3.11	3.59
June.....	6,990	1,490	3,880	1.39	1.55
July.....	3,690	1,250	1,850	.661	.76
August.....	1,880	606	1,450	.518	.60
September.....	6,100	725	2,310	.825	.92
The year.....	32,300	606	4,920	1.76	23.86

HUDSON RIVER AT MECHANICVILLE

Location.—At the Duncan dam of the West Virginia Pulp and Paper Company in Mechanicville, Saratoga County, 3,700 feet above the mouth of Anthony Kill, 1¼ miles below the mouth of Hoosic River and about 19 miles above the mouth of Mohawk River at Cohoes.

Drainage area.—4,500 square miles.

Records available.—1888 to 1918.

Gage.—Water-stage recorder at the dam, installed in 1910; previous to that date staff gage.

Computations of discharge.—Discharge over spillway determined from a rating curve based on United States Geological Survey coefficients for dams of ogee section. Discharge through turbines computed from records of their operation. Discharge at lock and through Barge Canal turbines at lock computed from records of the number of lockages per day.

Extremes of discharge.—Maximum daily discharge during year 35,500 second-feet April 3; minimum daily discharge 576 second-feet, Sunday, January 20.

1888–1918: Maximum discharge recorded, 120,000 second-feet at 6 A. M., March 28, 1913*. The plant is occasionally shut down and the flow of the river stored in the pond so that the discharge below the station occasionally becomes practically zero.

Diversions.—Water diverted above this station into the Champlain Canal. No correction made for this diversion. During 1915 a Barge Canal lock, through the Duncan dam, was completed and put into operation. Water used at the lock is included in the record.

Co-operation.—Discharge over the spillway and through turbines of the West Virginia Pulp and Paper Company furnished by Mr. W. J. Barnes, engineer of the West Virginia Pulp and Paper Company.

Daily discharge, in second-feet of Hudson River at Mechanicville, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1,190	19,800	3,720	1,870	1,620	8,370	25,800	15,000	7,070	2,330	1,640	631
2.....	1,430	16,800	4,170	1,870	1,060	7,430	30,600	17,800	5,510	2,650	1,350	1,050
3.....	1,750	14,300	3,000	1,830	638	8,050	35,500	14,800	5,960	2,460	1,740	2,600
4.....	2,120	11,300	3,840	1,810	685	6,840	35,200	15,000	4,540	1,460	587	2,520
5.....	2,010	10,200	3,250	1,810	638	6,040	30,800	13,400	4,750	3,020	1,220	2,140
6.....	2,020	8,600	3,180	1,160	584	6,980	26,500	11,200	4,280	2,290	1,670	2,170
7.....	1,640	7,580	3,040	1,610	1,340	6,510	23,200	9,700	4,060	1,430	1,650	1,790
8.....	2,440	6,460	2,840	1,600	1,850	5,390	22,500	9,500	5,050	1,990	1,520	1,190
9.....	1,940	6,120	2,500	1,610	1,780	5,680	24,300	10,600	5,720	2,990	1,410	1,120
10.....	1,980	5,270	2,250	1,620	587	6,150	25,200	11,400	5,660	2,580	1,420	1,740
11.....	1,600	2,800	1,900	1,540	614	5,940	23,900	11,100	7,320	2,090	1,160	2,140
12.....	1,530	4,910	1,880	1,500	1,050	5,250	21,200	10,700	6,060	1,820	1,200	1,890
13.....	1,980	4,750	1,950	795	749	5,820	19,200	11,300	6,670	2,250	2,040	2,040
14.....	1,570	4,520	2,040	1,400	2,520	6,640	17,800	15,200	7,140	1,710	2,010	1,580
15.....	2,740	4,020	2,480	1,220	4,080	6,190	16,900	16,900	6,500	3,930	1,940	1,030
16.....	3,490	3,760	2,670	1,420	4,210	5,740	16,000	15,800	5,490	4,140	1,710	1,360
17.....	3,280	3,720	2,830	1,130	1,200	8,150	17,200	13,700	5,320	3,640	1,680	2,180
18.....	3,390	3,160	2,480	606	3,570	9,920	18,800	11,700	5,130	3,790	988	2,090
19.....	3,440	3,710	2,520	606	5,840	11,700	20,500	9,450	4,770	3,400	1,190	1,780
20.....	3,340	3,870	2,710	576	22,400	14,200	20,900	11,200	4,020	3,120	1,670	1,780
21.....	2,310	3,580	2,810	741	9,610	16,400	19,500	8,430	3,300	1,830	1,670	3,360
22.....	3,320	3,760	2,850	1,760	7,230	18,600	23,300	8,070	4,070	2,240	1,650	3,290
23.....	4,800	3,920	2,080	1,940	6,960	20,900	22,400	6,710	3,380	2,160	1,630	2,700
24.....	3,590	5,440	3,120	2,050	6,350	21,100	24,200	6,710	3,940	1,770	1,600	3,120
25.....	3,770	4,450	2,220	2,010	7,830	22,700	19,600	5,480	4,790	1,350	788	2,690
26.....	4,440	4,680	2,700	1,720	16,000	22,500	17,500	5,560	4,130	1,260	1,040	5,230
27.....	4,650	4,090	2,360	1,140	11,300	20,600	15,600	6,200	3,980	1,230	1,300	12,100
28.....	4,790	2,940	2,170	1,250	9,950	19,100	14,100	6,450	3,100	810	1,470	9,740
29.....	5,310	2,700	2,000	1,900	.....	19,000	12,700	5,990	2,820	1,720	1,520	8,970
30.....	12,000	2,600	1,350	1,480	.....	20,600	14,400	5,750	1,600	2,170	1,630	7,800
31.....	20,100	.....	1,790	1,110	.....	22,400	.....	6,090	.....	1,920	1,460	.....

* Highest known flood prior to this time occurred April, 1869, calculated discharge, 70,000 second-feet. See Water Supply Paper 65, page 51, and report of U. S. Board of Engineers on Deep Waterways, Part I, pages 377–388.

Monthly discharge of Hudson River at Mechanicville, for the year ending September 30, 1918
[Drainage area, 4,500 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	20,100	1,190	3,660	0.813	0.94
November.....	19,800	2,600	6,130	1.36	1.52
December.....	4,170	1,350	2,600	.578	.67
January.....	2,050	576	1,440	.320	.37
February.....	22,400	584	4,720	1.05	1.09
March.....	22,700	5,250	12,000	2.67	3.08
April.....	35,500	12,700	21,800	4.84	5.40
May.....	17,800	5,480	10,500	2.33	2.69
June.....	7,320	1,600	4,870	1.08	1.20
July.....	4,140	810	2,310	.513	.59
August.....	2,040	587	1,470	.327	.38
September.....	12,100	631	3,130	.696	.78
The year.....	35,500	576	6,210	1.38	18.71

INDIAN LAKE RESERVOIR AT INDIAN LAKE

Location.—At the masonry storage dam at the outlet of Indian Lake, about 2 miles south of Indian Lake village, Hamilton County, and about 7½ miles above the confluence of the Indian with the Hudson.

Drainage area.—131 square miles, including about 9.3 square miles of water surface of Indian Lake at the elevation of crest of spillway. (Measured on U. S. G. S. topographic maps.)

Records available.—Records of stage and gage openings from July, 1900, to September 30, 1918.

Gages.—Elevation of water surface in reservoir is determined by chain gage on the crest of the dam near the gate house. Gage installed November 17, 1911, to replace staff gage previously maintained at the same point; mean elevation of crest of spillway is at gage height 33.38 feet. Widths of sluice gate openings determined by gage scales at sides of gate stems inside gate house. Gages read by Lester Savarie.

Extremes of stage.—Maximum elevation of water surface in reservoir 34.2 feet July 16, 17 and 18; minimum elevation, 5.15 feet February 25–26.

1900–1918: Maximum elevation recorded, 38.8 feet March 28, 1913; minimum elevation, 2.0 feet March 9 to 18, 1907, and January 3 to 17, 1910.

Regulation.—At ordinary stages the discharge is completely regulated by the operation of the sluice gates. Water is held in storage until needed to supplement the flow of the upper Hudson during the low water period. This storage capacity of about 4.7 billion cubic feet provides for a discharge of approximately 600 second-feet for a period of 90 days.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

For record of discharge see “Indian River near Indian Lake”.

Gate openings, in inches at Indian Lake Reservoir, at Indian Lake, for the year ending September 30, 1918

FROM		To		Sluice gate A, open	Sluice gate B, open
Date	Hour	Date	Hour	Inches	Inches
Sept. 12.....	6 a. m.	Oct. 5.....	6 a. m.	.....	48
Sept. 15.....	5 p. m.	Oct. 6.....	4 p. m.	60	.....
Oct. 10.....	5 p. m.	Oct. 13.....	3 p. m.	60	.....
Nov. 28.....	6 p. m.	Dec. 21.....	6 a. m.	60	.....
Dec. 11.....	6 a. m.	Feb. 27.....	7 a. m.	.....	48
Dec. 25.....	6 a. m.	Feb. 27.....	7 a. m.	30	.....
Mar. 3.....	7 a. m.	Mar. 5.....	6 p. m.	30	.....
Mar. 3.....	7 a. m.	Mar. 5.....	6 p. m.	.....	48
Mar. 11.....	5 p. m.	Mar. 19.....	1 p. m.	60	.....
Mar. 11.....	5 p. m.	Mar. 19.....	1 p. m.	.....	48
April 20.....	1 p. m.	April 20.....	9 p. m.	60	.....
April 20.....	9 p. m.	April 21.....	7 a. m.	30	.....
April 21.....	7 a. m.	April 21.....	1 p. m.	60	.....
April 23.....	3 p. m.	April 23.....	11 p. m.	60	.....
April 24.....	10 p. m.	April 26.....	5 a. m.	60	.....
April 26.....	1 p. m.	April 27.....	11 a. m.	60	.....
May 5.....	7 p. m.	May 6.....	7 p. m.	60	.....
July 24.....	9 a. m.	July 25.....	6 p. m.	.....	54
July 25.....	6 p. m.	July 27.....	5 p. m.	.....	30
July 27.....	5 p. m.	Sept. 14.....	4 p. m.	.....	54
Aug. 18.....	7 a. m.	Sept. 3.....	11 a. m.	60	.....
Sept. 7.....	5 p. m.	Sept. 20.....	6 p. m.	60	.....

NOTE.— The main logway was open 15 feet during the following periods: June 10, 7 a. m. to 10 a. m.; June 12, 7 a. m. to 6 p. m.; June 13, 10 a. m. to 2 p. m.; June 14, 9 a. m. to 6 p. m.; June 15, 2 p. m. to 6 p. m. It was also open 1 foot in width from 7 p. m. August 3 to 7 a. m. August 18.

Daily gage height, in feet, of Indian Lake Reservoir at Indian Lake, for the year ending September 30 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	17.95	21.8	23.65	16.7	9.5	6.2	12.15	27.85	33.5	33.65	32.2	22.5
2.....	17.65	22.1	23.6	16.4	9.25	6.5	13.3	28.25	33.6	33.65	32.0	22.15
3.....	17.35	22.3	23.55	16.15	9.0	6.4	14.55	28.55	33.65	33.65	31.75	21.8
4.....	17.1	22.5	23.5	15.9	8.75	6.4	15.45	28.85	33.65	33.7	31.4	21.6
5.....	16.95	22.65	23.45	15.65	8.5	6.35	16.0	29.05	33.65	33.7	31.1	21.45
6.....	17.0	22.75	23.35	15.4	8.25	6.6	16.55	29.1	33.85	33.75	30.8	21.2
7.....	17.05	22.85	23.25	15.15	8.0	6.9	16.95	29.3	34.0	33.8	30.55	21.0
8.....	17.1	22.9	23.15	14.9	7.7	7.2	17.45	29.55	34.0	33.85	30.3	20.7
9.....	17.15	23.05	23.05	14.65	7.5	7.5	18.1	29.85	34.0	33.9	30.0	20.35
10.....	17.15	23.15	22.9	14.4	7.3	7.8	18.7	30.05	34.0	33.95	29.85	20.0
11.....	17.1	23.2	22.7	14.1	7.1	8.1	19.1	30.3	34.0	34.0	29.55	19.7
12.....	17.1	23.25	22.45	13.85	6.9	8.05	19.5	30.55	33.8	34.05	29.25	19.4
13.....	17.15	23.3	22.2	13.65	6.7	8.0	19.8	30.8	33.75	34.1	29.0	19.1
14.....	17.3	23.35	21.95	13.45	6.5	7.95	20.05	31.2	33.65	34.1	28.75	18.85
15.....	17.45	23.4	21.65	13.25	6.3	7.9	20.3	31.5	33.6	34.15	28.55	18.75
16.....	17.6	23.4	21.3	13.05	6.1	7.85	20.75	31.7	33.6	34.2	28.25	18.65
17.....	17.7	23.45	20.9	12.65	5.9	7.8	21.4	31.9	33.65	34.2	28.0	18.55
18.....	17.8	23.5	20.55	12.45	5.7	7.75	22.2	32.05	33.6	34.2	27.65	18.5
19.....	17.9	23.55	20.2	12.25	5.6	7.9	22.9	32.15	33.55	34.15	27.25	18.55
20.....	18.0	23.65	19.9	12.05	5.5	8.2	23.4	32.25	33.5	34.15	26.85	18.55
21.....	18.2	23.75	19.65	11.85	5.4	8.5	23.75	32.4	33.5	34.1	26.45	18.65
22.....	18.3	23.85	19.4	11.6	5.3	8.7	24.55	32.5	33.5	34.0	26.1	18.75
23.....	18.45	23.95	19.2	11.4	5.25	8.85	25.15	32.6	33.5	34.0	25.65	18.8
24.....	18.5	24.0	19.0	11.2	5.2	9.15	25.55	32.7	33.5	33.9	25.2	18.85
25.....	18.85	24.05	18.8	11.0	5.15	9.6	25.8	32.85	33.55	33.6	24.9	18.9
26.....	19.0	24.05	18.5	10.85	5.15	10.0	26.05	32.9	33.55	33.5	24.45	19.05
27.....	19.15	24.05	18.2	10.65	5.5	10.4	26.2	33.0	33.5	33.35	24.05	19.35
28.....	19.35	24.05	17.9	10.45	5.9	10.7	26.65	33.1	33.6	33.05	23.65	19.5
29.....	19.55	23.9	17.6	10.25	.....	11.0	27.0	33.2	33.6	32.85	23.3	19.7
30.....	20.35	23.75	17.3	10.0	.....	11.3	27.45	33.3	33.6	32.5	23.0	19.85
31.....	21.25	.....	17.0	9.75	.....	11.55	.....	33.4	.....	32.35	22.75	.....

INDIAN RIVER NEAR INDIAN LAKE

Location.—About $\frac{3}{4}$ of a mile below the State Dam at the outlet of Indian Lake, about 2 miles south of Indian Lake Village, Hamilton County, 1 mile above the mouth of Big Brook and $6\frac{1}{2}$ miles above the mouth.

Drainage area.—132 square miles (measured on U. S. G. S. topographic maps).

Records available.—July 1, 1912 to June 30, 1914; June 5, 1915 to September 30, 1918; also miscellaneous measurements in 1911.

Gage.—Gurley repeating-hydrograph water-stage recorder, installed August 30, 1916, in a standard wooden shelter on the right bank about $\frac{3}{4}$ mile below the dam, at same datum as staff gage previously used. The staff gage is still in place and used for checking the recorder. Recorder inspected by Lester Savarie.

Discharge measurements.—Made from cable or by wading at the head of the rapids about 150 feet below the gage.

Extremes of discharge.—Maximum stage, from water-stage recorder, 4.85 feet at 4 A. M., June 12 (discharge, 1,450 second-feet); minimum stage, from water stage recorder, 0.07 foot at 12 P. M., September 30 (discharge, about 0.7 second-foot).

1900–1918: Maximum stage recorded 7.8 feet March 28, 1913 (discharge, 3,460 second-feet) minimum stage, from water-stage recorder, 0.07 foot at 12 P. M., September 30, 1918 (discharge, about 0.7 second-foot).

Channel and control.—The gage is at the side of a pool about 500 feet wide, called the “lower frog pond”. The reef of coarse gravel at the outlet of this pool forms the control and is permanent.

Winter flow.—Stage-discharge relation not affected by ice.

Regulation.—Discharge at this station is regulated by the operation of gates at the dam.

Accuracy.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined between 15 and 1,500 second-feet. Daily discharge ascertained by applying mean daily gage height to rating table for days when there have been no changes in the sluice gate openings at Indian Lake dam. Mean daily gage height determined by inspection of the hydrograph record. Discharge for days when gate openings are changed is mean of 24 hourly discharge values.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Indian River near Indian Lake, during the year ending September 30, 1918:

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
June 22a.....	J. W. Moulton.....	1.51	85.8
July 15a.....	“.....	1.40	91.3

a Logs on the control.

Daily discharge, in second-feet, of Indian River near Indian Lake, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	623	4	278	600	402	4	8	9	24	18	564	725
2.....	603	3	278	600	388	3	9	10	25	26	564	725
3.....	603	2	275	600	368	203	6	10	26	30	575	599
4.....	603	2	272	600	363	338	4	10	26	36	628	453
5.....	603	2	272	550	356	265	3	65	27	40	623	453
6.....	150	2	270	550	353	4	2	292	31	40	623	453
7.....	4	1	270	545	347	3	2	258	54	42	623	473
8.....	2	1	270	545	338	3	2	18	67	40	623	684
9.....	2	1	270	545	325	3	5	13	74	46	603	684
10.....	39	1	270	526	319	3	4	13	499	50	603	664
11.....	200	1	592	526	313	75	3	13	152	60	603	664
12.....	205	1	725	526	307	313	2	12	874	75	584	664
13.....	149	1	725	500	304	313	2	14	428	85	603	643
14.....	4	1	725	500	301	310	4	16	795	90	603	433
15.....	2	1	725	500	298	307	4	15	568	90	584	220
16.....	2	1	725	480	298	316	3	15	110	90	584	217
17.....	2	1	725	480	295	310	3	15	100	100	584	217
18.....	1	2	725	480	292	307	2	16	95	95	668	214
19.....	1	2	725	480	289	159	2	16	95	90	832	212
20.....	2	2	704	480	286	11	115	18	90	100	810	187
21.....	2	2	544	460	284	11	155	19	90	90	810	6
22.....	2	2	436	460	284	9	7	19	90	85	788	2
23.....	1	2	436	460	280	9	98	18	90	80	788	1
24.....	2	2	436	440	280	6	24	17	90	448	767	1
25.....	4	2	570	440	280	5	278	19	90	570	767	1
26.....	2	2	623	440	280	5	178	22	173	353	767	1
27.....	2	2	623	420	88	3	160	22	18	405	746	2
28.....	3	64	623	420	4	2	7	22	14	584	746	1
29.....	3	281	600	420	.....	3	7	22	13	584	725	1
30.....	15	281	600	400	.....	47	7	23	12	564	725	1
31.....	7	.....	600	400	.....	130	.....	24	.....	564	746	.....

NOTE.— Discharge December 29 to January 6, and January 13 to 31, estimated, because of no gage height record, from study of gage height graph and examination of record of operation of gates at Indian Lake dam. Discharge June 16 to July 25 estimated, because of logs on the control, from discharge measurements and study of gage height graph.

Monthly discharge of Indian River near Indian Lake, for the year ending September 30, 1918
[Drainage area, 132 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	623	1	124	.939	1.08
November.....	281	1	22.4	.170	.19
December.....	725	270	513	3.89	4.48
January.....	600	400	496	3.76	4.34
February.....	402	4	297	2.25	2.34
March.....	238	2	113	.856	.99
April.....	278	2	36.7	.278	.31
May.....	292	9	34.7	.263	.30
June.....	874	12	161	1.22	1.36
July.....	584	18	180	1.36	1.57
August.....	832	564	673	5.10	5.88
September.....	725	1	320	2.42	2.70
The year.....	874	1	248	1.88	25.54

SCHROON RIVER AT RIVERBANK

Location.—At the steel highway bridge near Riverbank post office, Warren county, near Tumblehead Falls, about 9 miles below Schroon Lake and about 9 miles above Warrensburg.

Drainage area.—534 square miles.

Records available.—September 2, 1907, to September 30, 1918.

Gage.—Chain, on upstream side of bridge; datum unchanged; read by J. H. Roberts.

Discharge measurements.—Made from the upstream side of bridge.

Channel and control.—Gravel; occasionally shifting. Logs become lodged on the control for a portion of nearly every year.

Extremes of discharge.—Maximum stage recorded during year, 7.25 feet at 9 A. M. and 4 P. M., April 4 (discharge, 5,820 second-feet); minimum stage recorded, 1.16 feet at 4 P. M., October 10 (discharge, 89 second-feet).

1907–1918: Maximum stage recorded, 10.7 feet at 5 P. M., March 28, 1913 (discharge about 13,500 second-feet) minimum stage recorded, 0.85 foot at 5 P. M., October 17, 1909 (discharge, about 23 second-feet).

Ice.—Stage-discharge relation affected by ice.

Regulation.—Flow affected by storage in Schroon and Brant Lakes.

Accuracy.—Stage-discharge relation probably permanent during year. Affected by ice for a large portion of the period from December to March and by logs on the control for a short period in May and June. Rating curve well defined between 150 and 4,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good for periods when the stage discharge relation is not affected by ice or logs. Results fairly good for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge Measurements of Schroon River at Riverbank, during the year ending September 30, 1918

DATE	Made by	Gage height.	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 15a.....	E. D. Burchard.....	3.08	394
Jan. 9a.....	J. W. Moulton.....	2.41	257
28b.....	E. D. Burchard.....	2.34	207
Mar. 2b.....	J. W. Moulton.....	2.85	334
25c.....	do.....	4.35	1,380
April 1c.....	do.....	6.02	3,040
10c.....	do.....	6.07	3,660
May 3.....	do.....	4.52	2,060
June 19c.....	do.....	3.86	1,090
July 12.....	do.....	1.54	179
12.....	do.....	1.54	180

a Measurement made through partial ice cover.

b Measurement made through complete ice cover.

c Gage height affected by logs on the control.

Daily discharge, in second-feet, of Schroon River at Riverbank, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	248	1,060	535	280	200	300	3,000	2,040	800	585	201	186
2.....	216	1,290	535	280	200	320	3,600	2,150	800	156	201	172
3.....	201	1,290	490	260	190	340	5,000	2,040	1,100	130	201	158
4.....	201	1,210	512	260	190	340	5,750	1,940	750	130	186	156
5.....	201	1,210	490	260	200	360	5,570	1,550	650	135	186	158
6.....	216	1,130	468	260	190	380	4,950	1,640	600	140	172	153
7.....	201	1,060	468	260	200	400	4,320	1,600	600	158	172	158
8.....	125	1,060	460	260	200	420	4,170	1,600	900	140	158	186
9.....	93	990	440	260	200	440	4,020	1,700	600	132	156	158
10.....	89	920	440	240	200	480	3,880	1,600	1,200	158	148	150
11.....	145	860	420	240	190	500	3,740	1,500	950	167	186	167
12.....	216	800	420	240	180	550	3,470	1,500	500	172	186	164
13.....	281	800	400	240	180	550	3,210	1,700	400	172	186	172
14.....	298	860	400	260	180	600	2,960	2,000	1,000	186	186	172
15.....	298	860	400	260	180	600	2,840	2,200	1,000	232	201	169
16.....	298	920	400	260	170	600	2,840	2,200	460	232	186	167
17.....	298	860	380	260	150	550	2,960	2,000	1,000	264	186	490
18.....	298	800	380	260	150	600	3,080	2,000	1,100	298	158	662
19.....	316	800	360	260	150	650	3,080	1,800	1,100	298	169	560
20.....	298	745	360	260	160	800	3,080	1,600	920	264	153	232
21.....	298	690	340	260	170	800	2,840	1,500	920	264	148	201
22.....	264	718	340	260	190	800	2,840	1,300	990	264	145	186
23.....	232	745	320	240	200	900	2,840	1,000	407	264	153	360
24.....	248	662	320	240	220	1,100	2,840	1,200	407	248	153	360
25.....	216	635	320	240	240	1,400	2,840	850	535	248	142	360
26.....	216	610	320	220	260	1,600	2,600	800	535	232	142	407
27.....	248	685	320	220	280	1,900	2,370	800	512	216	140	298
28.....	232	560	300	200	280	2,200	2,150	750	535	216	145	351
29.....	264	535	300	200	.....	2,400	1,740	750	298	232	140	351
30.....	490	512	300	200	.....	2,400	1,940	750	153	232	142	360
31.....	216	.....	280	200	.....	2,600	.....	800	.....	216	132	.....

NOTE.— Discharge December 8 to April 3 estimated, because of ice, and discharge May 7 to June 19, estimated, because of logs, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Hudson river at North creek.

Monthly discharge of Schroon River at Riverbank, for the year ending September 30, 1918
[Drainage area, 534 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	490	89	241	.451	.52
November.....	1,290	512	862	1.62	1.81
December.....	535	280	394	.738	.85
January.....	280	200	246	.461	.53
February.....	280	150	196	.367	.38
March.....	2,600	300	899	1.68	1.94
April.....	5,750	1,740	3,350	6.28	7.01
May.....	2,200	750	1,510	2.83	3.26
June.....	1,200	153	724	1.35	1.51
July.....	585	130	219	.410	.47
August.....	201	132	166	.311	.36
September.....	662	153	262	.492	.55
The year.....	5,750	89	755	1.41	19.19

SACANDAGA RIVER NEAR HOPE

Location.—About 1½ miles below the junction of east and west branches, 3¼ miles above Hope post office, Hamilton county, and 12 miles above Northville.

Drainage area.—494 square miles (measured on U. S. G. S. topographic maps).

Records available.—September 15, 1911, to September 30, 1918.

Gage.—Staff in two sections, the lower inclined, the upper vertical; read by Melvin Willis.

Discharge measurements.—Made from a cable about 100 feet below the gage or by wading.

Channel and control.—Rocky; probably permanent.

Extremes of discharge.—Maximum stage recorded during year, 6.7 feet at 5:55 P. M., October 30 (discharge, 8,490 second-feet); minimum stage recorded, 1.28 feet at 6:30 P. M., August 28, and 7:20 A. M., August 29 (discharge, 37 second-feet).

1911–1918: Maximum stage recorded, 10.0 feet at 5:30 P. M., March 27, 1913 (discharge, 24,800 second-feet); minimum stage recorded, 1.17 feet at 7:55 A. M., September 30, 1913 (discharge about 20 second-feet).

Ice.—Stage-discharge relation affected by ice.

Accuracy.—Stage-discharge relation permanent; affected by ice for a large portion of the period December to March, inclusive. Rating curve well defined between 60 and 10,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge relation is not affected by ice. Results fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Sacandaga River near Hope, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 8a.....	E. D. Burchard.....	2.62	203
29a.....	J. W. Moulton.....	2.70	203
30a.....	do	2.72	201

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of Sacandaga River near Hope, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	202	3,540	240	200	200	1,330	4,480	2,740	660	310	114	590
2.....	164	2,740	240	200	200	1,220	5,790	2,740	660	320	106	325
3.....	147	2,230	220	190	200	1,160	7,530	2,930	590	273	101	175
4.....	230	1,810	240	190	200	1,010	6,350	2,930	590	255	89	111
5.....	400	1,440	220	180	200	910	5,250	2,560	558	220	81	111
6.....	525	1,220	220	180	200	820	3,760	2,080	825	217	83	202
7.....	410	1,110	220	180	200	910	3,540	1,810	910	221	79	154
8.....	370	1,010	220	200	200	910	4,480	1,810	1,110	213	73	141
9.....	335	910	220	220	200	820	6,070	1,680	1,010	213	161	132
10.....	310	820	220	220	200	740	5,790	1,560	1,010	320	141	128
11.....	264	700	240	260	220	700	3,990	1,680	820	273	128	164
12.....	380	625	240	280	240	660	4,230	1,560	910	273	122	182
13.....	910	558	260	320	260	740	2,390	4,230	1,110	255	111	186
14.....	780	525	260	280	320	780	2,230	5,520	1,160	400	96	213
15.....	820	495	260	240	400	910	2,740	3,990	960	365	89	205
16.....	1,010	495	260	240	500	820	3,330	3,130	780	350	83	175
17.....	1,010	495	260	240	700	820	4,230	2,560	660	330	75	175
18.....	950	465	240	240	850	835	5,250	2,080	590	305	71	242
19.....	1,010	443	240	260	1,000	910	4,990	1,560	465	273	68	230
20.....	1,330	421	260	260	1,100	1,110	3,760	1,330	400	255	61	230
21.....	1,160	410	260	260	1,300	1,440	3,330	1,220	355	230	59	310
22.....	910	380	260	240	1,300	2,560	3,130	1,160	454	213	56	340
23.....	820	360	260	240	1,300	2,740	3,330	1,110	465	182	52	300
24.....	910	340	240	240	1,220	2,390	3,330	1,110	443	161	48	330
25.....	1,560	320	240	220	1,220	2,930	3,130	1,010	375	141	45	310
26.....	1,560	320	220	220	1,440	2,740	2,740	1,010	340	132	44	310
27.....	1,330	300	220	200	1,440	2,390	2,560	910	315	116	40	292
28.....	1,940	280	220	220	1,440	2,230	2,560	820	292	116	38	315
29.....	1,810	280	200	200	.....	2,230	2,560	780	255	108	39	335
30.....	1,810	260	200	200	.....	3,130	2,740	820	238	122	48	350
31.....	5,790	.....	200	200	.....	3,540	.....	740	.....	128	45	.....

NOTE.—Discharge November 22 to February 23, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Sacandaga river near Hadley.

Monthly discharge of Sacandaga River near Hope, for the year ending September 30, 1918
[Drainage area, 494 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	5,790	147	1,010	2.03	2.38
November.....	3,540	260	843	1.71	1.91
December.....	260	200	235	.476	.55
January.....	320	180	226	.457	.53
February.....	1,440	200	652	1.32	1.38
March.....	3,540	660	1,500	3.04	3.50
April.....	7,530	2,230	3,990	8.08	9.02
May.....	5,520	740	1,970	3.99	4.60
June.....	1,160	238	634	1.28	1.43
July.....	400	108	235	.476	.55
August.....	161	38	78.9	.160	.18
September.....	590	111	244	.494	.55
The year.....	7,530	38	965	1.95	26.58

SACANDAGA RIVER AT HADLEY

Location.—About half a mile west of railroad station at Hadley, Saratoga county, 1 mile above mouth of river and $4\frac{1}{2}$ miles below site of proposed storage dam at Conklingville.

Drainage area.—1,060 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—January 1, 1911, to September 30, 1918; September 13, 1907, to December 31, 1910, at upper bridge station; September 24, 1909, to midsummer of 1911, at lower bridge station.

Gage.—Gurley hydrograph water-stage recorder in a concrete shelter on the left bank, about one-half mile west of railroad station at Hadley; installed January 6, 1916, replacing a Barrett and Lawrence hydro-chronograph. Recorder inspected by J. F. Kelly.

Discharge measurements.—Made from a cable about 30 feet above the gage, or by wading under the cable, or about three-fourth of a mile above gage.

Channel and control.—Very rough but permanent.

Extremes of discharge.—Maximum stage during year, from water-stage recorder, 8.8 from 1 to 4 A. M., April 4 (discharge, 13,900 second-feet); minimum stage, from water-stage recorder, 2.36 feet at 10 P. M., August 28 (discharge, 92 second-feet).

1911-1918: Maximum stage recorded from water-stage recorder, 12.36 feet, from 11 A. M. to noon, March 28, 1918 (discharge, about 35,500 second-feet); minimum stage, from water-stage recorder, 2.25 feet all day September 15, 1913 (discharge, about 61 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation permanent; affected by ice during a large part of period from December to March, inclusive. Rating curve well defined between 150 and 20,000 second-feet. Operation of water-stage recorder satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights determined by inspecting gage height graph. Results excellent for periods when the stage-discharge relation is not affected by ice. Results fairly good for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Sacandaga River at Hadley, during the year ending September 30, 1915

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 11 ^a	E. D. Burchard.....	5.63	486
Jan. 4 ^b	J. W. Moulton.....	3.61	410
29 ^b	E. D. Burchard.....	3.44	437
Mar. 1 ^a	J. W. Moulton.....	8.52	3,750
9 ^a	do.....	5.48	1,850
21 ^a	do.....	5.72	3,190
April 2.....	do.....	7.82	10,200
25.....	do.....	6.91	7,400
26.....	E. D. Burchard.....	6.74	6,630
July 11.....	J. W. Moulton.....	3.29	607
11.....	do.....	3.31	599

^a Partial ice cover or ice jam on control.

^b Complete ice cover on control.

Daily discharge, in second-feet, of Sacandaga River at Hadley, for the year ending September 30, 1918

AY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	218	7,430	420	420	420	3,800	8,700	4,580	1,800	539	250	214
2.....	250	7,130	440	420	440	3,800	10,400	4,580	1,620	601	250	631
3.....	268	6,140	460	420	440	2,800	12,600	4,460	1,330	714	232	545
4.....	278	5,080	480	400	420	2,200	13,500	4,460	1,100	637	222	383
5.....	334	4,100	460	380	440	1,800	11,500	4,340	986	552	210	292
6.....	608	3,250	440	340	420	1,600	9,710	4,100	947	506	201	283
7.....	730	2,600	460	300	420	1,700	8,700	3,660	1,040	461	197	307
8.....	668	2,110	460	260	420	1,800	8,050	3,350	1,780	486	184	389
9.....	552	1,660	440	240	420	1,800	8,700	2,960	1,740	455	222	344
10.....	506	1,520	460	240	380	1,900	9,370	2,780	1,560	461	263	288
11.....	474	1,380	440	260	360	2,000	9,710	2,960	1,760	552	323	254
12.....	443	1,240	550	300	400	1,600	8,700	2,870	1,950	615	317	232
13.....	594	1,130	550	320	600	1,500	7,430	3,000	2,780	660	307	227
14.....	1,150	1,020	550	320	800	1,700	6,410	4,700	2,870	746	292	263
15.....	1,080	956	600	340	800	1,900	5,730	5,830	2,600	996	273	344
16.....	1,290	901	600	400	1,000	2,000	5,730	6,000	2,110	1,090	245	366
17.....	1,480	882	600	380	1,300	1,600	6,270	5,470	1,650	966	222	334
18.....	1,230	847	600	420	1,600	1,700	6,980	4,700	1,340	956	218	328
19.....	1,110	795	550	440	2,000	2,000	7,740	3,880	1,100	976	189	443
20.....	1,160	778	550	480	2,400	2,400	7,740	3,250	919	847	176	566
21.....	1,650	730	550	500	2,600	3,200	7,430	2,780	787	703	161	683
22.....	1,530	750	550	440	2,600	4,400	7,280	2,430	821	601	149	795
23.....	1,270	750	550	400	2,600	5,730	7,430	2,110	1,090	493	143	795
24.....	1,170	750	550	400	2,400	6,980	7,430	1,880	1,200	436	138	683
25.....	1,480	750	500	400	2,400	7,740	6,980	1,600	1,140	412	135	630
26.....	2,110	650	480	440	2,800	7,740	6,550	1,520	976	401	124	1,040
27.....	2,110	600	480	460	3,400	7,430	5,860	1,600	821	355	118	2,840
28.....	1,950	550	480	440	3,800	7,740	5,210	1,770	714	297	101	3,150
29.....	2,600	500	480	440	.....	7,430	4,700	1,720	622	283	101	2,690
30.....	4,440	440	460	420	.....	7,740	4,580	1,650	559	263	107	2,190
31.....	6,550	.....	440	420	.....	7,740	.....	2,030	.....	250	121	.....

NOTE.— Discharge November 22 to March 22 estimated because of ice from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Sacandaga River near Hope.

Monthly discharge of Sacandaga River at Hadley, for the year ending Sept. 30, 1918
[Drainage area, 1,060 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	6,550	218	1,330	1.25	1.44
November.....	7,430	440	1,910	1.80	2.01
December.....	600	420	504	.475	.55
January.....	500	240	382	.360	.42
February.....	3,800	360	1,360	1.28	1.33
March.....	7,740	1,500	3,720	3.51	4.05
April.....	13,500	4,580	7,900	7.45	8.31
May.....	6,000	1,520	3,330	3.14	3.62
June.....	2,870	559	1,390	1.31	1.46
July.....	1,090	250	591	.558	.64
August.....	323	101	200	.189	.22
September.....	3,150	214	751	.708	.79
The year.....	13,500	101	1,940	1.83	24.84

HOOSICK RIVER NEAR EAGLE BRIDGE

Location.—One-half mile below Walloomsac River and $1\frac{1}{2}$ miles above Owl Kill and Eagle Bridge, Rensselaer county.

Drainage area.—512 square miles (measured on U. S. G. S. topographic maps).

Records available.—August 13, 1910, to September 30, 1918; September 25, 1903, to December 31, 1908, at Buskirk, 4 miles below present station.

Gage.—Chain gage on the left bank near the farm house of James Russell, about $1\frac{1}{2}$ miles above Eagle Bridge, installed September 4, 1918.

From August 17, 1914, to September 3, 1918, an inclined staff gage on the left bank, about 50 feet above the chain gage.

From August 13, 1910, to August 16, 1914, chain gage on the left bank, about 450 feet above the present chain gage.

Gage read by Mrs. Viola Davis, Mrs. Volney Russell and Mrs. J. E. Sherman.

Discharge measurements.—Made from cable half mile below gage, or by wading.

Channel and control.—Gravel; somewhat shifting.

Extremes of discharge.—Maximum stage recorded during year, 12.8 feet at 5 P. M., February 15 (discharge, about 11,300 second-feet); minimum stage recorded, 2.1 feet at 7.30 A. M., September 8 (discharge about 40 second-feet).

1910-1918: Maximum stage not recorded, as gage used prior to August 17, 1914, could not be reached at high stages; minimum stage recorded, 6.1 feet at 5 P. M., September 14, 1913 (discharge, practically zero).

Ice.—Stage-discharge relation affected by ice.

Regulation.—Flow affected by storage on Walloomsac River and at Hoosick Falls, about 2 miles above gage.

Accuracy.—Stage-discharge relation probably permanent between dates of shifting; affected by ice during a large portion of the period December to March, inclusive. Rating curve well defined between 75 and 7,000 second-feet. Gage read to quarter tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except for periods of low water, when semi-daily gage heights may not indicate the true mean, and during periods when the stage-discharge relation is affected by ice. Results fair for the latter periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of Hoosick River near Eagle Bridge, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-Ft.</i>
Dec. 28 <i>a</i>	J. W. Moulton.....	3.80	201
Jan. 7 <i>a</i>	E. D. Burchard.....	4.10	133
28 <i>a</i>	J. W. Moulton.....	4.68	199
April 1.....	E. D. Burchard.....	6.19	2,830
1.....	do.....	6.08	2,630
May 20.....	J. W. Moulton.....	4.54	1,040
20.....	do.....	4.52	1,040
June 19.....	M. H. Carson.....	3.14	288
19.....	do.....	3.21	288
19.....	E. D. Burchard.....	3.21	294
Sept. 4.....	do.....	2.86 <i>b</i>	181
4.....	do.....	2.85 <i>b</i>	178

a Measurement made under complete ice cover.

b Observed on chain gage installed this day.

Daily discharge, in second-feet, of Hoosic River near Eagle Bridge, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	133	1,390	445	130	200	1,770	2,810	1,670	450	340	155	320
2.....	162	940	370	110	200	1,570	4,300	2,100	428	320	132	268
3.....	130	860	498	100	65	1,470	4,150	1,570	450	360	108	188
4.....	159	555	370	130	130	1,020	2,690	1,280	340	208	88	185
5.....	182	645	280	95	220	1,020	1,990	1,100	302	302	82	136
6.....	152	498	348	110	120	2,570	1,570	870	320	250	142	150
7.....	200	370	445	220	110	1,990	1,670	835	500	136	110	112
8.....	198	420	370	280	100	1,100	1,880	765	582	285	132	65
9.....	152	395	272	120	170	870	2,210	765	428	250	168	97
10.....	179	302	440	280	70	835	2,450	1,470	500	250	199	108
11.....	133	348	480	240	160	555	1,880	980	340	340	150	116
12.....	268	420	440	220	200	800	1,570	940	450	802	145	82
13.....	216	325	360	190	460	2,100	1,280	905	640	340	142	124
14.....	248	325	380	260	600	1,770	1,280	3,590	582	217	140	85
15.....	182	325	280	300	7,000	1,370	1,670	2,450	475	428	130	68
16.....	260	280	360	220	4,400	980	1,770	1,770	340	220	128	110
17.....	208	348	420	280	2,200	1,570	1,770	1,280	405	285	120	128
18.....	200	248	420	240	1,700	1,570	2,330	1,100	268	320	72	130
19.....	248	348	420	200	2,200	2,330	1,880	940	268	285	80	190
20.....	280	280	340	140	9,000	2,690	1,470	1,020	250	235	132	208
21.....	280	260	190	200	3,870	3,450	1,570	765	250	185	140	555
22.....	280	325	340	240	2,100	4,450	3,730	835	450	199	128	640
23.....	204	498	170	260	1,990	4,150	2,690	800	1,020	170	91	405
24.....	220	420	120	320	1,990	2,690	2,450	610	905	170	70	285
25.....	370	280	200	220	1,470	3,590	1,880	640	582	132	92	360
26.....	470	445	190	280	7,070	2,330	1,570	730	450	145	104	1,770
27.....	250	470	180	95	2,570	1,770	1,280	730	475	140	120	3,190
28.....	302	395	240	240	1,990	1,280	1,190	640	302	8	100	1,370
29.....	470	280	130	190	.....	1,370	1,190	555	268	110	120	800
30.....	325	302	65	260	.....	1,670	1,190	582	170	130	130	730
31.....	3,330	.....	130	180	.....	2,100	.....	528	.....	130	110	.....

NOTE.— Discharge December 16 to February 20 estimated, because of ice, from discharge measurements, weather records and study of gage height graph. Discharge September 4 to 30 determined from gage heights observed on new chain gage.

Monthly discharge of Hoosic River near Eagle Bridge, for year ending September 30, 1918
[Drainage area 512 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	3,330	120	336	.656	.76
November.....	1,390	248	443	.866	.97
December.....	498	65	313	.611	.70
January.....	320	95	205	.400	.46
February.....	9,000	65	1,870	3.65	3.80
March.....	4,450	555	1,900	3.71	4.28
April.....	4,500	1,190	2,050	4.00	4.46
May.....	3,590	528	1,120	2.19	2.52
June.....	1,020	170	440	.859	.96
July.....	428	86	235	.459	.53
August.....	190	70	121	.236	.27
September.....	3,190	65	432	.844	.94
The year.....	9,000	65	779	1.52	20.65

MOHAWK RIVER AT VISCHER FERRY DAM

Location.—At the Vischer Ferry dam of the Barge Canal (Lock No. 7), 1 mile above Stony Creek and Vischer Ferry, about 7 miles below Schenectady, Schenectady county, and about 11 miles above the mouth.

Drainage area.—3,400 square miles (measured on U. S. G. S. topographic maps).

Records available.—June 24, 1913, to September 30, 1918.

Gage.—Stevens water-stage recorder (showing head on crest of spillway) in the southerly corner of the basin near upper end of Barge Canal lock, installed August 18, 1916. Inclined staff gage at foot of an old bridge abutment about 100 feet above Vischer Ferry, read June 24 to December 16, 1913, and May 24 to June 2, 1914; staff gage in masonry of outer lock wall, just above upper gates, read March 30 to May 23, 1914, and March 30 to August 17, 1916. Datum of staff gage, 12.1 feet lower than that of recorder. Gurley water-stage recorder in the northerly (out stream) corner of the basin, used December 17, 1913, to March 29, 1914, and May 24, 1914, to February 23, 1916. This gage was destroyed by ice April 2, 1916, and the record from February 24 to April 2 was lost with it. Water stage recorder inspected by engineers from the Albany office of the United States Geological Survey; staff gage read by lock tenders.

Discharge measurements.—Made by wading below the dam at low water during 1913–1914. During the spring of 1915 the Crescent dam (next downstream) was closed, making further measurements impossible. No provision for measurements at medium and high stages.

Channel and control.—The control is the crest of the spillway.

Extremes of discharge.—Maximum stage during year, from water-stage recorder, 4.00 feet at 7 A. M., October 31; (discharge, 50,200 second-feet); minimum stage, from water-stage recorder, 0.20 foot at 6:45 P. M., October 14; (discharge, 670 second-feet).

1913–1918: Maximum stage recorded, 7.6 feet just before noon March 28, 1914, determined by leveling from flood marks; discharge not determined. Minimum stage from water-stage recorder, 0.18 foot from 4 A. M. to 5 A. M. and 4 P. M., October 31, 1914; (discharge about 290 second-feet).

Diversions.—Water was diverted into Erie canal at temporary lock in north end of dam prior to December, 1914. Measurements of this diversion were made at bridge 48, about a mile downstream but no allowance for the diversion was made in computing the flow.

Barge Canal Lock No. 7 at the south end of dam was put in operation May 15, 1915. The following tables of discharge include the flow over the spillway and through the lock and water wheels.

Accuracy.—Stage-discharge relation practically permanent. Probably not affected by ice. Rating curve fairly well defined by discharge measurements between 350 and 2,500 second-feet. Above 2,500 second-feet, based on theoretic coefficients. Operation of water-stage recorder satisfactory during periods of record. Daily discharge determined by use of discharge integrator. Results fairly good for periods of low water when the the water stage recorder was in operation. Results fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission. Recorder inspected by an employee of the State Superintendent of Public Works.

Daily discharge, in second-feet, of Mohawk River at Vischer Ferry Dam, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1,200	23,900	3,930	2,200	1,420	14,200	15,800	7,970	2,940	2,490	1,080	2,570
2.....	1,740	14,900	4,810	2,150	1,420	13,700	18,200	9,170	2,790	4,800	1,250	1,580
3.....	1,570	9,830	5,570	2,100	1,370	11,700	18,900	7,610	2,020	2,690	1,510	1,390
4.....	1,740	7,280	4,860	2,050	1,220	11,300	15,700	5,670	2,080	2,490	1,490	1,400
5.....	2,390	5,740	4,700	1,970	1,270	9,330	12,500	5,840	2,020	1,950	1,450	1,460
6.....	2,670	5,120	5,580	1,920	1,750	8,370	10,500	4,690	2,180	2,700	1,510	1,770
7.....	2,800	5,020	3,860	1,860	1,640	10,200	9,790	4,800	2,610	2,130	1,530	2,520
8.....	1,720	5,270	3,300	1,690	1,420	10,300	9,680	5,030	3,480	1,660	2,730	1,260
9.....	1,810	4,470	2,700	1,530	1,320	8,450	15,000	3,500	2,850	1,950	1,490	1,180
10.....	2,130	3,750	2,300	1,420	1,270	7,090	19,600	3,230	3,340	2,280	3,570	1,110
11.....	2,340	3,920	2,100	1,370	1,220	6,140	15,800	4,800	4,620	3,030	2,490	1,320
12.....	1,910	3,740	2,060	1,580	1,130	6,070	13,200	4,800	11,100	2,610	1,450	1,890
13.....	2,680	3,770	2,230	1,320	1,180	7,610	11,400	6,010	8,900	3,040	1,440	2,370
14.....	2,440	3,620	2,170	1,320	1,800	15,200	12,500	14,700	5,670	3,600	1,170	2,500
15.....	3,410	3,410	1,720	1,530	4,370	13,200	16,700	11,100	3,730	5,180	1,390	2,390
16.....	6,380	3,310	1,610	1,420	5,320	8,930	14,600	7,900	3,590	5,240	1,020	2,110
17.....	4,310	2,870	1,780	1,860	5,250	7,010	13,600	5,050	3,440	2,950	1,130	1,790
18.....	4,120	3,220	2,080	1,750	4,800	15,200	16,700	4,540	3,380	3,350	840	3,420
19.....	3,290	2,990	2,290	1,420	4,160	20,400	19,200	4,000	2,340	3,040	760	2,880
20.....	6,830	3,100	2,290	1,480	10,800	22,100	15,700	3,720	2,150	2,440	1,120	2,960
21.....	8,070	3,230	2,290	1,860	27,600	26,000	12,600	4,920	2,090	2,350	1,320	3,830
22.....	6,490	3,790	2,060	1,480	14,500	28,700	16,800	4,270	3,260	1,820	1,260	3,730
23.....	4,480	8,840	2,100	1,480	10,500	36,000	18,800	4,580	2,770	2,180	1,140	2,560
24.....	5,870	6,680	2,150	1,370	8,370	29,500	15,700	3,560	2,590	1,650	1,130	3,620
25.....	10,200	4,820	2,200	1,580	7,970	22,800	12,700	3,660	3,150	1,710	1,160	2,910
26.....	8,880	2,820	2,250	1,530	9,410	19,300	10,300	2,800	2,520	1,480	1,000	7,360
27.....	6,520	2,470	2,300	1,580	18,800	14,400	7,740	5,120	2,340	1,420	800	10,700
28.....	7,120	3,690	2,340	1,800	15,700	11,100	7,010	5,400	2,020	1,250	780	7,270
29.....	8,980	2,340	2,340	1,860	.....	11,000	6,610	4,470	2,540	1,160	970	4,280
30.....	23,200	2,650	2,350	1,480	.....	13,400	7,010	3,750	1,560	1,180	1,090	3,400
31.....	43,900	.....	2,300	1,480	.....	14,900	.....	3,300	.....	1,020	1,640	.....

NOTE.—No discharge record December 5 to March 18, April 23 to May 17, June 18, August 12 to 19, August 26 to September 6, September 13 to 16 and 27 to 30. Figures given above for these periods taken from record at Crescent Dam.

Monthly discharge of Mohawk River at Vischer Ferry Dam, for the year ending September 30, 1918
[Drainage area, 3,430 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF Depth in inches on drainage area
	Maximum	Minimum	Mean	Per square mile	
October.....	43,900	1,200	6,170	1.80	2.08
November.....	23,900	2,340	5,350	1.56	1.74
December.....	5,580	1,610	2,790	.813	.94
January.....	2,200	1,320	1,660	.484	.56
February.....	27,600	1,130	5,960	1.74	1.81
March.....	36,000	6,070	14,600	4.26	4.91
April.....	19,600	6,610	13,700	4.00	4.46
May.....	14,700	2,800	5,480	1.60	1.84
June.....	11,100	1,560	3,340	.974	1.09
July.....	5,240	1,020	2,480	.723	.83
August.....	3,570	760	1,380	.402	.46
September.....	10,700	1,110	2,980	.869	.97
The year.....	43,900	760	5,480	1.60	21.69

MOHAWK RIVER AT CRESCENT DAM

Location.—At the Crescent dam of the Barge canal, about three miles above the mouth of the river at Cohoes.

Drainage area.—3,490 square miles. (Measured on U. S. G. S. topographic maps by State Engineer Department.)

Records available.—December 1, 1917, to September 30, 1918.

Gage.—Gurley 7-day water-stage recorder on left bank about 50 feet above guard gate at head of Waterford flight of locks. It is about 200 yards from left end of spillway. Inspected by operator from Barge canal power house at the dam.

Determination of discharge.—The rating curve for the spillway has been computed from discharge determined from records at Vischer's Ferry and gage heights observed at Crescent. Discharge through the locks and water wheels determined from records of operation of the locks.

Regulation.—Seasonal distribution of flow regulated by the Delta reservoir on the upper Mohawk, and by Hinckley reservoir on West Canada creek. Large irregular diurnal fluctuations during low water caused by operation of movable dams upstream.

Accuracy.—Stage discharge relation permanent. Probably not affected by ice. Since rating is based on computation only, its accuracy is indeterminate. Record from water-stage recorder satisfactory. Results probably fairly good for periods of low water and fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor. Recorder inspected by an employee of the State Superintendent of Public Works.

Daily discharge, in second-feet, of Mohawk River at Crescent Dam, for the year ending September 30 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....			4,020	2,200	1,420	14,200	15,700	7,970	3,920	1,940	1,020	2,570
2.....			5,360	2,150	1,420	13,700	17,700	9,170	3,520	4,560	1,030	1,560
3.....			5,670	2,100	1,370	11,700	18,800	7,610	2,900	2,490	1,090	1,300
4.....			4,980	2,050	1,220	11,300	16,700	5,670	2,840	2,660	1,120	1,400
5.....			4,700	1,970	1,270	9,330	13,200	5,840	2,750	1,920	1,130	1,460
6.....			5,580	1,920	1,750	8,370	11,100	4,690	2,760	2,240	1,050	1,770
7.....			3,860	1,860	1,640	10,200	10,300	4,800	3,120	1,950	1,180	2,710
8.....			3,300	1,690	1,420	10,300	10,200	5,030	3,920	1,180	2,160	2,080
9.....			2,700	1,530	1,320	8,450	14,100	3,500	2,990	1,630	1,180	1,910
10.....			2,300	1,420	1,270	7,090	20,500	3,230	3,400	1,930	2,410	1,660
11.....			2,100	1,370	1,220	6,140	16,700	4,800	3,970	2,830	1,820	1,420
12.....			2,060	1,580	1,130	6,070	14,200	4,800	6,710	2,540	1,450	1,970
13.....			2,230	1,320	1,180	7,610	12,000	6,010	9,880	2,760	1,440	2,370
14.....			2,170	1,320	1,800	15,200	11,500	14,700	7,800	3,320	1,170	2,500
15.....			1,720	1,530	4,370	13,200	15,200	11,100	4,970	4,570	1,390	2,390
16.....			1,610	1,420	5,320	8,930	14,200	7,900	3,890	4,840	1,020	2,110
17.....			1,780	1,860	5,250	7,010	13,200	5,050	3,520	3,030	1,130	1,820
18.....			2,080	1,750	4,800	15,200	15,200	4,760	3,380	2,900	840	3,720
19.....			2,290	1,420	4,160	19,900	18,800	4,110	2,570	3,150	760	3,580
20.....			2,290	1,480	10,800	21,500	15,700	3,710	2,130	2,660	870	3,520
21.....			2,290	1,860	27,600	25,500	12,500	4,910	2,430	2,240	830	3,280
22.....			2,060	1,480	14,500	27,900	15,100	4,340	3,240	1,640	820	3,470
23.....			2,100	1,480	10,500	35,500	18,800	4,610	2,990	2,180	820	2,550
24.....			2,150	1,370	8,370	31,600	15,700	3,780	2,610	1,820	950	2,960
25.....			2,200	1,580	7,970	23,700	12,700	3,730	3,270	1,810	1,230	2,580
26.....			2,250	1,530	9,410	19,300	10,300	3,380	2,460	1,630	1,000	5,790
27.....			2,300	1,580	18,800	14,700	7,740	4,690	2,420	1,520	800	10,700
28.....			2,340	1,800	15,700	11,100	7,010	6,000	1,900	1,310	780	7,270
29.....			2,340	1,860	.....	10,300	6,610	4,970	2,180	1,190	970	4,260
30.....			2,350	1,480	.....	12,700	7,010	4,400	1,600	1,200	1,090	3,400
31.....			2,300	1,480	.....	14,700	.....	3,800	.....	1,060	1,640	.....

Monthly discharge of Mehawk River at Crescent Dam, for the year ending September 30, 1918
 [Drainage area, 3,490 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	.....	.....	.....	.....	.....
November.....	.....	.....	.....	.....	.....
December.....	5,670	1,610	2,820	0.808	.93
January.....	2,200	1,320	1 660	.476	.55
February.....	27 600	1,130	5 940	1.71	1.78
March.....	35 500	6,070	14,600	4.18	4.82
April.....	20,500	6,610	13,600	3.90	4.35
May.....	14,700	3,230	5,580	1.60	1.84
June.....	9,880	1,600	3,540	1.01	1.13
July.....	4,840	1,030	2,350	.673	.78
August.....	2,410	760	1,170	.335	.39
September.....	10,700	1,390	3,010	.862	.96

EAST BRANCH OF DELAWARE RIVER AT FISH EDDY

Location.—At the railway bridge in the village of Fish Eddy, Delaware county, about 4 miles below the mouth of Beaver kill and 5½ miles above the confluence of east and west branches.

Drainage area.—790 square miles. (Measured on post route map.)

Records available.—November 19, 1912, to September 30, 1918. Records were obtained at Hancock, about 4 miles below from October 14, 1902, to December 31, 1912.

Gage.—Staff, in two sections, on down-stream end of left pier of railroad bridge; read by J. P. Lyons.

Discharge measurements.—Made from the highway bridge about 200 feet above the gage, or by wading.

Channel and control.—Coarse gravel; occasionally shifting.

Extremes of discharge.—Maximum open-water stage recorded during year, 15.4 feet at 3 P. M., October 30; (discharge about 27,400 second-feet); minimum stage recorded, 1.70, several times in August and September; (discharge 141 second-feet).

1912–1918: Maximum stage, 17.4 feet during the afternoon of March 27, 1913, determined by leveling from flood marks; (discharge about 33,500 second-feet); minimum stage recorded, 1.64 feet at 5 P. M., October 12, 14, 15, 1914; (discharge 97 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation apparently permanent, except for two or three months immediately following the spring flood. Affected by ice during a large part of the period from December to March, inclusive. Rating curve well defined between 200 and 20,000 second-feet. Gage read to half-tenths twice daily. Results good except for periods when the stage discharge relation was affected by ice, when results were fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of East Branch of Delaware River at Fish Eddy, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
Oct. 15.....	E. D. Burchard.....	2.95	702
Dec. 20 ^a	C. C. Covert.....	4.92	590
Jan. 14 ^b	do.....	3.85	456
Feb. 9 ^a	E. D. Burchard.....	3.50	250
Mar. 9.....	do.....	5.13	2,670
June 5.....	do.....	3.55	1,120
Aug. 15.....	do.....	2.08	243

^a Measurement made through partial ice cover.
^b Measurement made through complete ice cover.

Daily discharge, in second-feet, of East Branch of Delaware River at Fish Eddy, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	300	7,360	1,080	360	340	4,560	2,210	2,210	2,210	530	228	340
2.....	300	5,620	1,080	340	340	4,390	2,210	2,100	1,890	480	328	385
3.....	300	3,910	1,000	320	340	4,390	2,100	1,410	1,580	480	228	300
4.....	300	3,760	1,000	300	300	4,390	2,100	1,160	1,320	430	228	245
5.....	408	3,760	1,080	300	280	3,610	2,100	1,160	1,160	385	228	228
6.....	320	3,460	1,160	300	260	3,760	1,990	1,160	920	385	228	183
7.....	300	2,430	1,160	300	220	3,610	1,990	1,160	850	385	213	168
8.....	300	1,690	1,160	300	240	3,320	1,990	1,160	850	385	213	163
9.....	300	1,500	1,160	300	280	2,920	2,920	1,000	780	385	198	141
10.....	281	1,160	1,200	300	220	3,050	3,460	1,000	745	408	198	141
11.....	920	1,080	1,100	300	200	2,550	2,920	920	1,590	480	198	141
12.....	1,690	1,080	1,000	340	220	2,320	2,790	920	2,430	430	198	141
13.....	1,320	1,000	1,000	400	300	2,320	3,050	1,000	1,790	320	228	141
14.....	930	920	900	550	500	3,050	3,320	1,160	1,240	281	228	141
15.....	710	850	900	500	1,000	2,790	3,320	1,500	1,160	281	245	141
16.....	650	780	800	440	3,400	2,320	3,910	1,320	1,040	300	228	141
17.....	590	780	750	460	2,400	2,320	4,730	1,240	850	408	198	168
18.....	590	780	650	440	1,500	3,460	4,900	1,080	780	480	183	168
19.....	650	650	600	480	1,000	3,610	5,620	1,080	710	430	174	198
20.....	2,100	590	550	420	5,500	5,620	5,620	2,210	710	385	168	262
21.....	1,790	590	550	400	4,900	6,000	5,810	1,500	710	340	168	455
22.....	1,590	710	500	440	3,760	7,970	6,000	1,320	1,320	340	154	620
23.....	1,240	2,320	500	420	2,790	7,760	5,440	1,320	1,160	320	154	430
24.....	1,080	1,890	500	440	2,550	7,160	4,900	1,240	1,040	300	141	385
25.....	3,910	1,790	500	340	2,430	7,160	4,230	1,160	960	300	141	455
26.....	2,920	1,690	480	320	2,550	6,380	3,460	2,100	780	300	141	430
27.....	2,790	1,500	440	320	2,670	4,070	2,920	2,670	710	281	141	3,610
28.....	4,560	1,160	380	360	3,610	2,790	2,550	2,550	710	262	141	1,890
29.....	3,050	1,160	380	360	.....	2,430	2,320	2,320	590	228	141	1,500
30.....	17,500	885	380	340	.....	2,320	2,100	2,100	530	228	141	1,000
31.....	14,500	.....	380	360	.....	2,320	.....	2,320	.....	228	168	.....

NOTE.—Discharge December 10 to February 20 estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for the station at Hale Eddy.

Monthly discharge of East Branch of Delaware River at Fish Eddy, for year ending September 30, 1918
[Drainage area, 790 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	14,500	281	2,200	2.79	3.22
November.....	7,360	590	1,900	2.41	2.69
December.....	1,200	380	785	.994	1.15
January.....	550	300	373	.472	.54
February.....	5,500	200	1,580	2.00	2.08
March.....	7,970	2,320	4,020	5.09	5.87
April.....	6,000	1,990	3,430	4.34	4.84
May.....	2,670	920	1,500	1.90	2.19
June.....	2,430	530	1,100	1.39	1.55
July.....	530	228	360	.456	.53
August.....	245	141	189	.239	.28
September.....	3,610	141	490	.620	.69
The year.....	14,500	141	1,490	1.89	25.63

DELAWARE RIVER AT PORT JERVIS

Location.—At the toll bridge at Port Jervis, Orange county, 1 mile above Neversink river and 6 miles below Mongaup river.

Drainage area.—3,250 square miles.

Records available.—October 12, 1904, to September 30, 1918.

Gage.—Staff, in two sections; the upper section vertical and attached to down-stream end of left abutment; the lower section inclined, about 30 feet down-stream. Prior to June 20, 1914, a chain gage on the bridge was used; read by Mrs. Bella Fuller.

Discharge measurements.—Made from the highway bridge, or by wading.

Channel and control.—Gravel; occasionally shifting.

Extremes of discharge.—Maximum stage recorded during year, 12.3 feet at 8 A. M., October 31 (discharge 61,600 second-feet); minimum stage recorded, 1.1 feet, 8 a. m. August 26 and 5 p. m. August 28 (discharge, 390 second-feet).

1904–1918. Maximum stage recorded, 16.0 feet at 8 a. m. March 28, 1914 (discharge, 92,700 second-feet); minimum stage recorder, 0.60 foot at 8. m. September 22 and 23, 1908 (discharge, 175 second-feet).

Ice.—Stage discharge relation somewhat affected by ice.

Accuracy.—Stage-discharge relation practically permanent between dates of shifting; affected by ice during large part of January and February. Rating curve well defined between 1,000 and 30,000 second-feet. Gage read to hundredths twice daily from July 1 to September 30, and to tenths once daily, October 1 to June 30. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge relation is not affected by ice and fairly good for other periods.

Co-operation.—Gage heights, October 1 to June 30, furnished by U. S. Weather Bureau. Station established and maintained by the United States Geological Survey in cooperation with the State Engineer and Surveyor.

Discharge measurements of Delaware River at Port Jervis, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
Oct. 17.....	E. D. Burchard.....	2.37	1,800
Feb. 8 a.....	C. C. Covert.....	3.19	1,170
Mar. 12.....	E. D. Burchard.....	4.82	9,450
12.....	do.....	4.80	9,540
June 8.....	J. W. Moulton.....	3.10	3,330
Aug. 13.....	E. D. Burchard.....	1.50	650
13.....	do.....	1.53	657

a Measurement made through partial ice cover.

Daily discharge in second-feet, of Delaware River at Port Jervis, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	685	33,500	2,920	1,200	1,200	14,100	6,700	7,810	7,060	2,070	780	830
2.....	685	19,200	3,160	1,200	1,100	28,200	7,430	7,060	6,700	1,720	880	880
3.....	685	13,100	3,160	1,200	1,000	18,600	8,200	6,700	5,360	2,070	780	1,110
4.....	990	10,300	3,160	1,200	1,000	14,100	9,010	5,680	3,910	1,890	732	935
5.....	780	8,200	2,920	1,200	1,000	11,600	8,600	5,360	3,910	1,640	780	780
6.....	780	7,060	2,470	1,000	1,000	11,600	8,200	5,050	3,650	1,240	685	780
7.....	880	6,010	2,070	1,000	1,000	20,500	6,010	4,750	3,650	1,240	642	685
8.....	990	5,680	1,720	950	1,200	14,100	5,360	4,460	3,400	1,390	685	642
9.....	1,110	4,750	1,390	1,200	1,200	11,600	5,050	3,650	3,650	1,550	685	600
10.....	990	3,910	1,720	1,300	1,200	10,300	9,840	3,400	2,920	1,390	732	525
11.....	880	3,910	2,070	1,300	1,200	12,100	10,300	3,160	2,470	1,390	732	490
12.....	780	3,650	2,920	1,400	1,000	9,010	9,010	2,920	2,690	1,470	685	490
13.....	1,110	3,160	2,690	1,600	1,200	7,810	8,600	4,460	3,160	1,470	780	490
14.....	3,650	2,920	2,470	1,600	1,600	14,100	8,200	7,430	5,360	1,550	780	562
15.....	2,470	2,690	2,260	1,700	2,400	15,100	13,100	6,350	4,180	1,720	990	830
16.....	2,070	2,690	2,000	1,700	3,500	12,100	16,200	5,050	3,650	1,980	990	780
17.....	1,890	2,690	2,000	1,900	8,500	11,200	14,100	4,460	2,920	1,640	780	685
18.....	1,890	2,470	1,900	1,500	8,000	15,100	15,100	3,910	2,470	1,550	685	685
19.....	1,720	2,260	1,700	1,500	7,000	16,200	16,800	3,650	2,260	1,550	562	880
20.....	1,720	2,260	1,600	1,300	11,600	18,600	13,600	3,650	2,070	1,550	490	1,050
21.....	4,460	2,070	1,600	1,200	35,000	20,500	11,600	6,010	1,890	1,550	455	1,640
22.....	3,910	2,070	1,600	1,000	29,000	21,800	19,200	5,360	2,070	1,240	422	2,690
23.....	3,400	4,460	1,600	1,000	15,100	23,900	21,200	5,360	5,360	1,180	390	2,260
24.....	2,920	4,180	1,600	1,600	10,700	19,800	16,200	4,750	4,460	990	390	1,890
25.....	4,460	3,650	1,700	1,500	8,200	15,100	13,600	3,910	3,400	880	390	1,550
26.....	9,010	3,400	1,600	1,200	8,600	13,100	11,200	3,910	2,920	780	390	1,550
27.....	7,060	3,160	1,700	1,200	35,000	11,200	9,010	4,460	2,470	780	455	6,700
28.....	6,010	2,920	1,600	1,100	24,600	9,010	7,810	6,010	2,070	685	390	7,430
29.....	7,060	2,690	1,500	1,100	.....	7,430	6,700	6,010	1,890	685	455	5,050
30.....	9,420	2,470	1,400	1,100	.....	7,060	6,350	6,010	1,720	685	455	3,650
31.....	61,600	.....	1,300	1,100	.....	6,700	.....	8,200	.....	880	455	.....

NOTE.— Discharge December 10 to February 19, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for stations on the east and west branches.

Monthly discharge of Delaware River at Port Jervis, for the year ending September 30, 1918.

[Drainage area, 3,250 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	61,600	685	4,710	1.45	1.67
November.....	33,500	2,070	5,720	1.76	1.96
December.....	3,160	1,300	2,030	.624	.72
January.....	1,900	950	1,290	.397	.46
February.....	35,000	1,000	7,980	2.45	2.55
March.....	28,200	6,700	14,200	4.38	5.06
April.....	21,200	5,050	10,700	3.30	3.68
May.....	8,200	2,920	5,130	1.58	1.82
June.....	7,060	1,720	3,460	1.06	1.18
July.....	2,070	685	1,370	.422	.49
August.....	990	390	629	.194	.22
September.....	7,430	490	1,640	.505	.56
The year.....	61,600	390	4,880	1.50	20.36

BEAVER KILL AT COOKS FALLS

Location.—At the covered highway bridge in Cooks Falls, Delaware county.
Drainage area.—236 square miles. (Measured on post route and U. S. G. S. topographic maps.)

Records available.—July 25, 1913, to September 30, 1918.

Gage.—Vertical staff, in two sections, bolted to rock on left bank under the bridge; read by J. L. Rosa and Ralph Rosa and H. B. Couch.

Discharge measurements.—Made from the bridge or by wading a short distance down-stream.

Channel and control.—Coarse gravel, boulders and solid ledge, practically permanent.

Extremes of discharge.—Maximum stage recorded during year, 12.4 feet at 5 P. M., October 30; (discharge about 9,700 second-feet); minimum stage recorded, 0.84 foot at 7 A. M., and 3 P. M., August 24; (discharge 41 second-feet).

1913–1918: Maximum stage recorded, 12.4 feet at 5 P. M., October 30, 1917; (discharge about 9,700 second-feet); minimum stage recorded, 0.70 foot from 7 A. M., October 12 to 7 A. M., October 13, 1916; (discharge 30 second-feet).

Ice.—Stage-discharge relation somewhat affected by ice.

Accuracy.—Stage-discharge relation practically permanent; affected by ice during portions of the period from December to March, inclusive. Rating curve well defined between 50 and 4,500 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge relation is not affected by ice; fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of Beaver Kill at Cooks Falls, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 16.....	E. D. Burchard.....	2.32	366
Nov. 22.....	C. C. Covert.....	2.05	270
Dec. 20 ^a	do.....	2.20	201
Jan. 14 ^a	do.....	3.10	207
Feb. 9 ^b	E. D. Burchard.....	2.28	107
Mar. 11.....	do.....	3.39	820
June 7.....	J. W. Moulton.....	2.32	316
Aug. 15.....	E. D. Burchard.....	1.39	129
15.....	do.....	1.39	128

^a Measurement made through complete ice cover.
^b Measurement made through partial ice cover.

Daily discharge, in second-feet, of Beaver Kill at Cooks Falls, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	186	1,730	371	200	130	.....	1,330	805	455	197	80	244
2.....	186	1,400	355	190	130	.....	1,800	705	371	197	72	132
3.....	175	1,080	355	190	120	.....	1,800	615	325	164	65	80
4.....	244	805	325	190	120	.....	1,940	570	296	175	62	67
5.....	269	705	310	190	120	.....	1,260	530	296	164	89	58
6.....	208	615	282	190	110	.....	1,020	490	269	146	76	56
7.....	186	282	256	200	110	.....	910	455	355	146	64	59
8.....	175	404	244	190	110	.....	805	371	325	146	59	56
9.....	220	325	232	190	110	805	1,400	355	256	142	59	56
10.....	164	310	220	200	110	830	1,460	355	256	164	59	51
11.....	154	296	200	200	.....	805	1,260	355	232	175	128	54
12.....	310	282	200	200	.....	755	1,080	340	355	164	120	54
13.....	244	296	200	200	.....	855	910	355	340	186	101	75
14.....	340	296	200	200	.....	1,020	1,020	1,020	282	256	76	58
15.....	355	296	200	200	.....	755	1,330	660	256	310	130	52
16.....	310	269	190	200	.....	705	1,400	490	220	186	91	51
17.....	256	282	200	200	.....	855	1,200	455	208	164	73	48
18.....	232	325	200	200	.....	1,260	1,940	420	197	164	62	55
19.....	232	310	200	200	.....	1,730	1,400	387	197	142	59	132
20.....	530	296	200	190	.....	2,240	1,080	387	175	130	55	110
21.....	490	282	200	180	.....	2,720	1,800	420	164	118	48	310
22.....	325	404	200	180	.....	3,310	2,720	387	855	112	46	175
23.....	282	1,140	190	170	.....	2,960	1,730	387	404	105	43	140
24.....	530	615	186	170	.....	2,160	1,400	355	325	100	41	124
25.....	910	371	197	170	.....	1,940	1,140	340	256	98	122	112
26.....	570	355	197	160	.....	1,660	910	455	232	94	64	530
27.....	1,590	340	208	160	.....	1,400	805	420	197	89	51	910
28.....	1,260	325	197	160	.....	1,020	705	387	186	82	46	490
29.....	1,940	340	200	150	.....	910	705	325	186	85	72	325
30.....	7,110	387	200	140	.....	1,260	805	455	175	83	64	269
31.....	2,400	.....	200	130	.....	1,260	.....	530	.....	92	43	.....

NOTE.— Discharge December 11-23 and December 29 to February 10, estimated, because of ice from discharge measurements, weather records, study of gage height graph and comparison with similar studies for East Branch of Delaware river at Fish Eddy. Mean discharge February 11-28, estimated 584 second-feet; mean discharge March 1-8, estimated 1,370 second-feet.

Monthly discharge of Beaver Kill at Cooks Falls, for year ending September 30, 1918
[Drainage area, 236 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	7,110	154	722	3.06	3.53
November.....	1,730	269	505	2.14	2.39
December.....	371	186	230	.975	1.12
January.....	200	130	184	.780	.90
February.....	.....	.....	417	1.77	1.84
March.....	3,310	705	1,420	6.02	6.94
April.....	2,720	705	1,300	5.51	6.15
May.....	1,020	325	470	1.99	2.29
June.....	855	164	288	1.22	1.36
July.....	310	82	148	.627	.72
August.....	130	41	71.6	.303	.35
September.....	910	48	164	.695	.78
The year.....	7,110	41	493	2.09	28.37

WEST BRANCH OF DELAWARE RIVER AT HALE EDDY

Location.—At the highway bridge in the village of Hale Eddy, Delaware county, 8 miles below the power dam of the Deposit Electric Co. and $8\frac{1}{2}$ miles above junction with the East Branch of Delaware river.

Drainage area.—611 square miles. (Measured on post route map.)

Records available.—November 15, 1912, to September 30, 1918. Records obtained at Hancock, about 7 miles below, from October 15, 1902, to December 31, 1912.

Gage.—Vertical staff in four sections, attached to rocks near the right abutment of the bridge and to the abutment; read by William Seeley, and W. S. Shanly.

Discharge measurements.—Made from the cable, installed in July, 1916, about 400 feet below the gage. Previous measurements made from the highway bridge or by wading.

Channel and control.—Coarse gravel and boulders; practically permanent.

Extremes of discharge.—Maximum stage recorded during year, 13.4 feet at 4 P. M., February 20; stage discharge relation affected by ice, discharge not determined; minimum stage recorded, 1.5 feet several times in August; discharge, 65 second-feet.

1912-1918: Maximum stage recorded,* 15.3 at 5 P. M., March 27, 1913; discharge, about 25,000 second-feet; minimum stage recorded, 1.0 foot at 6 P. M., September 21, 1913; discharge, 34 second-feet.

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation practically permanent. Rating curve well defined between 300 and 18,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good during periods when the stage-discharge relation is not affected by ice. Results fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of West Branch of Delaware River at Hale Eddy, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 15.....	E. D. Burchard.....	2.81	484
Dec. 21 ^a	C. C. Covert.....	3.14	225
Jan. 15 ^a	do	3.53	270
Feb. 9 ^a	do	3.20	212
Mar. 9.....	E. D. Burchard.....	4.72	1,850
9.....	do	4.71	1,860
June 5.....	J. W. Moulton.....	3.56	883
5.....	do	3.58	875
Aug. 14.....	E. D. Burchard.....	1.62	94
14.....	do	1.61	92.5

* The observer states that on October 10, 1893, the water rose to an elevation indicated by a nail in a tree near the gage. This nail is at gage height 20.3 feet. No data available indicating whether the present rating is applicable to this gage height.

^a Measurement made through complete ice cover.

Daily discharge, in second-feet, of West Branch of Delaware River at Hale Eddy, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	135	5,900	580	100	260	7,650	1,260	1,180	1,560	388	150	101
2.....	155	3,800	605	100	240	4,960	1,580	1,180	1,180	555	142	130
3.....	130	2,670	455	120	240	3,800	1,850	1,110	1,110	660	118	232
4.....	170	2,140	455	170	240	3,540	1,940	900	1,040	480	118	232
5.....	250	1,760	410	85	240	2,560	1,580	900	900	432	110	170
6.....	325	1,420	388	40	240	4,080	1,260	780	840	410	89	250
7.....	325	1,260	325	90	220	4,660	1,260	780	900	432	85	268
8.....	305	1,110	305	110	220	3,030	1,110	780	1,040	410	69	215
9.....	200	970	300	130	220	1,940	1,850	660	840	345	85	200
10.....	232	840	300	130	220	1,940	2,240	555	720	305	105	155
11.....	215	780	300	160	240	1,760	1,940	530	605	245	170	170
12.....	250	720	300	360	300	1,580	1,940	505	2,560	388	118	150
13.....	1,110	660	280	260	420	2,790	1,940	1,110	2,340	388	105	161
14.....	720	555	280	260	800	2,670	1,940	1,940	1,420	455	85	142
15.....	505	555	260	280	1,300	2,140	3,150	1,760	970	530	95	150
16.....	555	480	260	280	2,000	1,760	3,030	1,340	970	505	130	118
17.....	480	455	240	280	2,400	1,760	2,560	1,110	840	432	142	130
18.....	365	455	240	280	2,400	2,790	2,340	900	840	455	130	215
19.....	365	410	240	260	2,600	3,280	2,560	840	605	455	118	250
20.....	1,500	410	240	260	2,600	3,540	2,340	1,340	505	410	110	285
21.....	1,180	410	220	280	2,600	4,360	2,340	2,040	505	388	105	720
22.....	720	480	240	280	2,560	4,660	3,030	1,670	1,850	345	110	780
23.....	720	900	240	280	2,670	3,030	2,910	1,940	1,420	325	89	720
24.....	900	840	300	280	2,670	2,560	2,340	1,580	1,040	285	69	840
25.....	2,340	480	200	280	2,910	2,340	2,140	1,260	840	250	69	1,260
26.....	2,140	388	300	260	10,900	2,040	1,850	1,580	605	232	75	2,340
27.....	1,340	345	300	260	3,800	1,760	1,580	1,850	605	170	81	2,560
28.....	2,140	432	200	260	3,540	1,760	1,420	2,140	505	101	81	2,240
29.....	1,940	505	170	260	.....	1,420	1,180	2,040	455	95	95	2,040
30.....	11,600	455	150	260	.....	1,260	1,180	2,140	455	118	105	1,340
31.....	12,800	.....	90	260	.....	1,180	.....	1,850	.....	250	95	.....

NOTE.— Discharge December 9 to February 21, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for the station at Fish Eddy.

Monthly discharge of West Branch of Delaware River, at Hale Eddy, for the year ending September 30, 1918

[Drainage area, 611 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	12,800	130	1,490	2.44	2.81
November.....	5,900	345	1,090	1.78	1.99
December.....	605	90	296	.484	.56
January.....	360	40	217	.355	.41
February.....	10,900	220	1,750	2.86	2.98
March.....	7,650	1,180	2,860	4.68	5.40
April.....	3,150	1,110	1,990	3.26	3.64
May.....	2,140	505	1,300	2.13	2.46
June.....	2,560	455	1,080	1.64	1.83
July.....	660	95	366	.599	.69
August.....	170	69	105	.172	.20
September.....	2,560	101	619	1.01	1.13
The year.....	12,800	40	1,080	1.77	24.10

SUSQUEHANNA RIVER AT CONKLIN

Location.—At the steel highway bridge, just below Conklin, Broome county, 5 miles below Big Snake creek and 8 miles above Chenango river.

Drainage area.—2,350 square miles.

Records available.—November 13, 1912, to September 30, 1918. Records were obtained at Binghamton, 8 miles below, from July 31, 1901, to December 31, 1912.

Gage.—Stevens water-stage recorder on left bank, just below the bridge, installed October 4, 1914. Prior to that date, staff in two sections, the lower section inclined; the upper vertical, attached to left abutment. Water-stage recorder inspected by Mr. Geo. W. Marvin.

Discharge measurements.—Made from the bridge or by wading.

Channel and control.—Coarse gravel and boulders; probably permanent.

Extremes of discharge.—Maximum stage during year, from water-stage recorder, 12.87 feet at 10:30 A. M., March 1; (discharge, about 25,900 feet); minimum stage, from water-stage recorder, 2.42 feet at 6:00 P. M., Aug. 12; (discharge, 482 second-feet).

1912–1918: Maximum stage recorded, 19.74 feet at the former station in Binghamton at 7:40 A. M., March 22, 1902; (discharge, about 62,500 second-feet); minimum stage recorded, 1.32 feet at 8:20 A. M. and 4 P. M., September 16, 1913; (discharge, 106 second-feet).

Ice.—Stage-discharge relation affected by ice.

Accuracy.—Stage-discharge relation practically permanent. Affected by ice for a large portion of the period from January to March, inclusive. Rating curve well defined between 250 and 55,000 second-feet. Operation of the water-stage recorder fairly satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table, except for days when the mean gage height would not give the discharge within 1 per cent. when the discharge is the mean of 24 hourly discharge values. Gage heights determined by inspecting gage height graph or by taking mean of two observations per day. Results good, except for periods when the stage-discharge relation was affected by ice, when they are fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of Susquehanna River at Conklin, during the year ending September 30 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 17 ^a	C. C. Covert.....	5.06	811
Feb. 11 ^a	do	4.25	950
Mar. 3 ^b	do	11.1	10,600
8 ^b	E. D. Burchard.....	9.83	11,260
19.....	C. C. Covert.....	8.45	11,000
April 26.....	do	6.12	5,740
June 4.....	J. W. Moulton.....	4.50	2,620
Aug. 16.....	E. D. Burchard.....	2.73	672

^a Measurement made through complete ice cover.

^b Measurement made through partial ice cover.

Daily discharge, in second-feet, of Susquehanna River at Conklin, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	506	8,280	1,700	900	800	12,000	4,840	5,170	5,380	1,570	607	800
2.....	500	6,860	1,800	900	800	11,000	5,170	5,720	4,140	2,000	572	1,800
3.....	470	5,380	1,800	850	800	9,000	5,720	5,170	3,330	2,510	558	1,350
4.....	506	4,640	1,700	850	950	7,000	6,860	4,530	2,750	1,880	524	979
5.....	537	3,860	1,600	800	950	5,500	6,170	4,230	2,360	1,690	512	775
6.....	726	3,500	1,500	800	1,000	7,000	4,640	3,770	2,210	1,520	530	882
7.....	1,010	3,160	1,400	750	850	10,000	3,950	3,500	2,510	1,330	512	826
8.....	1,030	2,830	1,300	750	900	11,000	3,590	3,240	3,950	1,200	506	698
9.....	1,020	2,590	1,100	700	900	8,500	4,980	2,990	3,680	1,100	488	712
10.....	938	2,360	1,200	700	950	8,000	7,100	2,590	2,590	1,150	500	642
11.....	890	2,360	1,200	700	950	8,000	6,630	2,440	2,280	1,300	530	600
12.....	1,060	2,510	1,200	700	1,000	7,500	5,720	2,280	4,680	1,880	530	544
13.....	1,520	2,510	1,200	650	1,600	7,000	5,380	5,460	5,720	2,360	635	680
14.....	2,140	2,360	1,200	700	2,400	12,000	6,570	13,700	4,430	1,940	726	733
15.....	2,000	2,070	1,200	700	6,500	13,000	11,500	10,500	3,420	1,750	768	670
16.....	1,750	1,350	1,100	750	8,500	10,000	12,800	6,860	2,750	1,880	691	677
17.....	2,070	1,810	1,100	750	10,000	8,500	10,500	4,840	2,280	1,630	663	712
18.....	1,810	1,810	1,100	750	9,500	9,500	10,800	3,950	2,000	1,460	558	816
19.....	1,690	1,810	1,100	800	8,000	12,000	10,500	3,330	1,690	1,750	530	914
20.....	3,330	1,750	1,100	800	6,500	14,000	8,280	3,080	1,520	1,570	530	1,300
21.....	4,530	1,880	1,100	850	6,500	15,500	6,880	6,130	1,350	1,270	530	2,590
22.....	3,680	1,810	1,100	850	6,500	16,800	9,500	5,280	2,830	1,200	530	2,440
23.....	2,990	2,990	1,100	850	6,500	16,100	11,300	5,720	3,950	1,060	530	1,940
24.....	3,640	3,500	1,100	800	6,500	13,100	9,740	4,740	3,420	1,010	530	1,570
25.....	6,860	2,910	1,100	800	7,000	10,200	8,280	3,590	2,590	997	530	1,400
26.....	6,170	2,210	1,100	800	7,500	8,760	6,860	4,640	2,140	890	530	3,930
27.....	4,840	1,940	1,100	800	8,000	7,560	5,720	7,330	1,750	803	530	7,100
28.....	5,500	1,750	1,000	900	9,500	6,400	5,030	7,330	1,460	726	530	6,400
29.....	6,860	1,690	1,000	850	.....	5,380	4,330	5,280	1,330	656	530	4,640
30.....	20,400	1,700	1,000	750	.....	4,950	4,530	7,500	1,250	663	530	3,240
31.....	28,000	.....	950	700	.....	4,840	.....	6,170	.....	663	530	.....

NOTE.— Discharge October 31 to November 10, estimated, because of no gage height record from study of gage height graph and comparison with record on Chenango river near Chenango Forks. Discharge November 30 to March 20, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Chenango river near Chenango Forks.

Monthly discharge of Susquehanna River at Conklin, for the year ending September 30, 1918
[Drainage area, 2,350 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	28,000	470	3,840	1.63	1.88
November.....	8,280	1,350	2,870	1.22	1.36
December.....	1,800	950	1,230	.523	.60
January.....	900	650	782	.333	.38
February.....	10,000	800	4,350	1.85	1.93
March.....	16,800	4,840	9,680	4.12	4.75
April.....	12,800	3,590	7,130	3.03	3.33
May.....	13,700	2,280	5,200	2.21	2.55
June.....	5,720	1,250	2,860	1.22	1.36
July.....	2,510	656	1,400	.596	.69
August.....	768	488	558	.238	.27
September.....	7,100	544	1,750	.744	.83
The year.....	28,000	470	3,460	1.47	19.98

CHENANGO RIVER NEAR CHENANGO FORKS

Location.—About $1\frac{1}{2}$ miles below Tioughnioga river, 2 miles by road below Chenango Forks post office, Broome county, and $11\frac{1}{2}$ miles above Binghamton and the mouth of the Chenango river.

Drainage area.—1,380 square miles. See "Diversions."

Records available.—November 11, 1912, to September 30, 1918. Records were obtained at Binghamton, July 31, 1901, to December 31, 1911.

Gage.—Stevens water-stage recorder on the left bank on the farm of Erastus Ingraham.

Discharge measurements.—Made from cable, about 100 feet above the gage, or by wading.

Channel and control.—Sand, gravel and small cobble stones; practically permanent.

Extremes of discharge.—Maximum stage during year, from water-stage recorder, 10.75 feet at noon, May 14; (discharge, about 22,000 second feet); minimum stage, from water-stage recorder, 2.39 feet at 4 P. M., August 4, and 7 A. M., August 5; (discharge, 166 second-feet).

1901–1918: Maximum stage recorded, 12.18 feet from noon until 1 P. M., April 2, 1916; (discharge, 27,900 second-feet); minimum stage recorded, 4.6 feet at the former station in Binghamton at 8 A. M., August 29, 1909; (discharge, about 10 second-feet).

Ice.—Stage-discharge relation affected by ice.

Diversions.—The run-off from 87.3 square miles at head of Chenango river and from 15.7 square miles at head of Tioughnioga river is stored in reservoirs and except for discharge over the spillways, is diverted out of the drainage area through the Erie canal. The above mentioned drainage area for Chenango river does not include these two areas.

Accuracy.—Stage-discharge relation practically permanent; affected by ice for a large part of the period from January to March, inclusive. Rating curve well defined between 120 and 35,000 second-feet. Operation of the water-stage recorder fairly satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights, determined by inspecting gage height graph, or for days of considerable fluctuation by averaging the hourly discharge. Results good except for periods when stage-discharge relation was affected by ice, when results were fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of Chenango River near Chenango Forks, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 14.....	E. D. Burchard.....	4.02	1,820
Dec. 26 ^a	C. C. Covert.....	3.94	838
Jan. 16 ^b	do.....	5.06	640
Feb. 11 ^b	do.....	4.29	595
Mar. 2 ^a	do.....	9.35	8,880
7 ^a	E. D. Burchard.....	8.93	10,600
22.....	C. C. Covert.....	9.08	14,800
April 26.....	do.....	4.72	3,100
June 3.....	J. W. Moulton.....	3.87	1,680
Aug. 16.....	E. D. Burchard.....	3.01	559

^a Measurement made through partial ice cover.

^b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Chenango River near Chenango Forks, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	740	8,800	1,560	650	380	8,000	3,550	3,260	3,160	3,160	496	338
2.....	750	5,920	2,180	600	380	9,000	3,860	2,970	2,100	1,860	414	360
3.....	740	4,720	1,630	550	380	7,000	4,280	2,270	1,620	1,600	322	360
4.....	750	3,860	1,520	550	400	4,200	4,500	2,360	1,700	1,400	232	360
5.....	1,170	3,160	1,420	480	420	3,400	3,160	2,100	1,170	1,200	246	360
6.....	1,430	2,790	1,280	460	440	6,500	2,520	1,860	1,300	950	398	360
7.....	1,250	2,610	1,080	440	480	10,000	2,180	1,660	3,260	850	398	360
8.....	1,030	2,270	994	420	500	7,500	2,100	1,550	2,880	750	446	360
9.....	1,380	2,020	800	400	550	7,000	4,970	1,410	1,760	700	338	360
10.....	1,310	1,940	900	400	550	7,000	4,960	1,380	1,520	750	487	360
11.....	1,090	1,780	1,000	400	600	7,500	4,060	1,570	1,560	2,000	555	360
12.....	1,040	1,660	1,100	420	700	8,000	3,750	1,530	3,810	2,930	487	360
13.....	2,790	1,520	1,200	440	1,100	10,000	3,550	3,960	3,580	1,860	487	414
14.....	2,020	1,380	1,100	550	1,600	17,800	5,030	5,640	2,440	1,520	860	574
15.....	1,670	1,280	1,000	650	2,600	16,600	8,800	3,350	1,860	1,530	660	740
16.....	3,160	1,270	950	650	3,800	11,800	7,100	2,440	1,490	1,300	438	772
17.....	2,270	1,270	900	500	4,200	10,900	5,430	1,940	1,270	1,200	438	740
18.....	1,720	1,180	850	480	3,600	13,400	7,650	1,660	1,140	1,400	438	882
19.....	1,670	1,170	850	440	5,500	11,200	6,440	1,500	1,010	1,100	438	970
20.....	5,210	1,140	850	360	9,500	13,000	4,500	1,300	904	900	438	1,780
21.....	4,180	1,120	800	360	9,000	14,200	4,060	5,680	827	750	414	2,610
22.....	2,880	1,300	850	380	8,000	14,200	5,550	3,160	2,190	650	360	1,600
23.....	2,360	1,260	850	380	8,000	12,700	5,430	3,160	1,940	574	322	1,700
24.....	3,140	1,410	850	380	7,000	9,400	4,720	2,520	1,570	772	322	2,180
25.....	7,060	1,720	850	380	7,000	7,100	3,860	2,700	1,250	882	322	3,160
26.....	5,070	1,340	850	380	10,000	5,800	3,160	2,790	1,020	700	322	3,960
27.....	3,650	1,250	850	380	9,500	4,840	2,790	4,170	871	555	322	4,060
28.....	4,900	1,250	800	380	8,500	3,960	2,360	3,750	761	360	322	2,610
29.....	4,840	1,230	800	380	.....	3,550	2,100	3,160	710	622	322	1,660
30.....	11,600	1,250	750	380	.....	3,550	2,700	2,970	982	504	322	1,350
31.....	14,200	.....	700	380	.....	3,550	.....	3,350	.....	504	322	.....

NOTE.— Discharge December 9 to March 13, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Susquehanna river at Conklin. Discharge May 18 to June 10 and July 23 to September 30 determined from semi-daily observations on the staff gage. Discharge July 3-7 and 16-22 estimated by comparison of gage height graph with that for the Susquehanna at Conklin.

Monthly discharge of Chenango River near Chenango Forks, for year ending September 30, 1918
[Drainage area, 1,380 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	14,200	740	3,130	2.27	2.62
November.....	8,800	1,120	2,160	1.57	1.75
December.....	2,180	700	1,040	.754	.87
January.....	650	360	452	.328	.38
February.....	10,000	380	3,740	2.71	2.82
March.....	17,800	3,400	8,790	6.37	7.34
April.....	8,800	2,100	4,300	3.12	3.48
May.....	5,680	1,300	2,680	1.94	2.24
June.....	3,810	710	1,720	1.25	1.40
July.....	3,160	360	1,160	.841	.97
August.....	860	232	400	.296	.34
September.....	4,060	338	1,200	.870	.97
The year.....	17,800	232	2,560	1.86	25.18

CHEMUNG RIVER NEAR CHEMUNG

Location.—At the highway bridge, about midway between Chemung, Chemung county, New York, and Willawana, Pa., half a mile up-stream from the State line and about 10 miles above the mouth.

Drainage area.—2,440 square miles.

Records available.—September 11, 1903, to September 30, 1918.

Gage.—Tape gage at the up-stream side of the right span of the bridge; read by D. L. Orcutt.

Discharge measurements.—Made from the bridge at medium and high stages and by wading at low stages.

Channel and control.—Sand and gravel; occasionally shifting.

Extremes of discharge.—Maximum stage recorded during year, 17.96 feet at 7 A. M., March 15; discharge, about 67,000 second-feet; minimum stage recorded, 1.64 feet at 6:30 A. M., August 30; discharge, 146 second-feet.

1903–1918: Maximum stage recorded, 17.96 feet at 7 A. M., March 15, 1918; discharge, about 67,000 second-feet; minimum stage recorded, 1.47 feet at 7 A. M., August 14, 1911; discharge, about 49 second-feet.

Ice.—Stage discharge relation affected by ice.

Regulation.—Power is developed above the station, the largest plant being at Elmira, N. Y.

Accuracy.—Stage-discharge relation probably permanent between dates of shift; affected by ice for a large portion of the period from December to March, inclusive. Rating curve well defined between 200 and 45,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except during periods when the stage discharge relation was affected by ice. Results fair for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Chemung River near Chemung, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 18.....	E. D. Burchard.....	3.17	1,230
Dec. 24 ^a	C. C. Covert.....	3.46	1,010
Feb. 10 ^b	E. D. Burchard.....	3.28	344
Mar. 6.....	do.....	5.19	4,420
20.....	C. C. Covert.....	5.91	5,200
April 28.....	do.....	4.18	2,500
June 1.....	E. D. Burchard.....	4.85	3,712
July 19.....	do.....	2.03	336

^a Measurement made through partial ice cover.

^b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Chemung River near Chemung, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	602	7,850	870	700	400	25,700	1,860	2,290	3,650	630	299	168
2.....	588	5,760	960	650	380	18,000	1,860	2,600	2,600	581	282	192
3.....	588	4,650	870	650	360	10,400	2,000	2,140	2,000	539	255	208
4.....	567	3,840	1,000	600	340	5,760	3,100	1,860	1,540	518	250	227
5.....	710	3,280	870	600	260	4,440	2,760	1,540	1,420	490	343	200
6.....	1,050	2,760	790	600	280	5,080	2,140	1,480	1,250	470	288	200
7.....	980	2,440	750	600	320	10,400	1,860	1,480	2,760	451	451	208
8.....	870	2,290	670	600	320	4,860	1,730	1,300	3,100	401	354	338
9.....	750	2,000	490	550	320	4,440	3,280	1,250	1,730	377	321	288
10.....	870	1,860	500	550	340	7,280	4,240	1,150	1,300	377	299	266
11.....	830	1,730	700	550	380	8,440	3,460	1,200	1,200	377	389	208
12.....	670	1,540	850	650	480	5,080	3,460	1,360	2,000	407	630	200
13.....	1,730	1,420	800	500	16,800	11,400	3,280	1,420	3,100	438	532	232
14.....	1,860	1,300	850	550	12,400	38,200	5,530	2,600	1,860	389	401	255
15.....	1,300	1,200	1,000	600	12,400	54,900	20,400	2,440	1,360	343	360	525
16.....	1,420	1,150	1,000	600	11,000	12,400	33,100	1,730	1,150	343	302	383
17.....	1,600	1,150	1,000	600	3,840	8,440	23,000	1,480	960	332	288	432
18.....	1,200	1,150	900	600	2,600	6,490	22,500	1,250	830	310	266	870
19.....	1,050	1,050	900	600	2,140	5,300	12,400	1,150	750	299	236	1,200
20.....	16,800	1,000	850	550	19,200	6,000	7,560	1,050	670	299	204	1,480
21.....	7,010	960	800	500	17,600	6,490	6,000	2,000	602	288	196	5,760
22.....	4,240	1,000	800	500	4,440	6,490	7,560	2,760	2,000	282	184	2,600
23.....	3,100	1,200	850	500	3,460	5,760	6,240	3,460	3,280	266	184	1,730
24.....	3,650	1,300	1,000	480	3,100	4,440	5,530	4,440	2,000	266	184	1,300
25.....	24,300	1,100	1,100	500	3,100	3,650	4,440	2,760	1,420	266	172	1,050
26.....	17,200	710	1,300	460	9,700	3,280	3,460	3,460	1,100	432	168	1,360
27.....	16,800	670	1,500	460	11,400	2,760	2,930	4,860	870	419	154	2,140
28.....	18,000	790	1,300	440	6,750	2,440	2,600	5,300	750	343	157	1,600
29.....	13,100	790	1,000	460	.....	2,290	2,140	3,460	790	299	164	1,300
30.....	17,200	830	800	420	.....	2,000	2,140	8,440	670	288	154	1,000
31.....	13,800	.....	750	400	.....	2,000	.....	6,240	.....	277	161	.....

Note.—Discharge [December 10 to February 12, estimated because of ice from discharge measurements, weather records, study of gage height graph and comparison with similar studies for nearby streams.

Monthly discharge of Chemung River at Chemung, for the year ending September 30, 1918
[Drainage area, 2,440 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF Depth in inches on drainage area
	Maximum	Minimum	Mean	Per square mile	
October.....	24,300	567	5,630	2.31	2.56
November.....	7,850	670	1,960	.804	.90
December.....	1,500	490	898	.368	.42
January.....	700	400	550	.225	.26
February.....	19,200	260	5,150	2.11	2.20
March.....	54,900	2,000	9,500	3.89	4.49
April.....	33,100	1,730	6,750	2.77	3.09
May.....	8,440	1,050	2,580	1.06	1.22
June.....	3,650	602	1,620	.663	.74
July.....	630	266	380	.156	.18
August.....	630	154	278	.114	.13
September.....	5,760	168	931	.382	.43
The year.....	54,900	154	3,000	1.23	16.72

TIOGA RIVER NEAR ERWINS

Location.—At highway bridge one-quarter mile below the mouth of the Canisteo river near Erwins, Steuben county, and about three miles above the junction of the Tioga and Cohocton river to form the Chemung river at Painted Post.

Drainage area.—Not as yet determined.

Records available.—July 12 to September 30, 1918.

Gage.—Chain near left abutment, down-stream side of bridge. Graduated and read to quarter-tenths twice daily by Miss Jane Sexton.

Discharge measurements.—Made from bridge and at low stages by wading near the control one hundred yards down-stream.

Channel and control.—Well compacted gravel, probably permanent.

Ice.—Stage discharge relation affected by ice.

Regulation.—There is no considerable storage to interfere with the seasonal flow.

Co-operation.—Installed and maintained by the United States Geological Survey in co-operation with the Lamoka Electric Power Corporation.

Sufficient data have not been obtained for determination of discharge.

Discharge measurement of Tioga river near Erwins, during the year ending September 30, 1918.

DATE	Made by	Gage height	Dis-charge
		<i>feet</i>	<i>Sec. ft.</i>
July 17.....	E. D. Burchard.....	1.15	125
17.....	do	1.15	124
Aug. 17.....	C. C. Covert.....	1.28	143

COHOCTON RIVER NEAR CAMPBELL

Location.—At the highway bridge, known locally as Red bridge, nearly two miles up-stream from the town of Campbell, Steuben county, and about midway between Campbell and Savona.

Drainage area.—Not determined.

Records available.—July 11, 1918, to September 30, 1918.

Gage.—Standard chain gage secured to the down-stream handrail of the bridge near the left abutment; read by Miss Dora Wood.

Discharge measurements.—Made from bridge or by wading.

Channel and control.—Firmly bedded gravel, not likely to shift.

Ice.—Stage discharge relation probably affected by ice.

Regulation.—Seasonal distribution of flow is probably not affected by small reservoirs above.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Lamoka Electric Power Corp.

Sufficient data have not been obtained for determination of discharge.

Discharge measurements of Cohocton River near Campbell, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
		<i>Feet</i>	<i>Sec.-ft.</i>
July 17.....	E. D. Burchard.....	0.82	94.2
17.....	do.....	0.82	91.3
19.....	do.....	0.85	106
Aug. 18.....	C. C. Covert.....	0.79	68.8

Daily gage height in feet, of Cohocton River near Campbell, for the year ending September 30, 1918

DAY	July	Aug.	Sept.	DAY	July	Aug.	Sept.
1.....		0.91	0.86	16.....	0.87	0.76	0.73
2.....		.81	.71	17.....	.86	.76	.98
3.....		.81	.71	18.....	.84	.73	1.10
4.....		.92	.70	19.....	.85	.74	1.41
5.....		.81	.70	20.....	.83	.72	2.07
6.....		.83	.82	21.....	.78	.73	1.86
7.....		.89	.91	22.....	.75	.71	1.57
8.....		.84	.78	23.....	.78	.77	1.37
9.....		.81	.70	24.....	.83	.72	1.31
10.....		.85	.68	25.....	1.23	.70	1.26
11.....	0.95	.84	.74	26.....	1.04	.72	1.46
12.....	1.03	.83	.70	27.....	.88	.71	1.42
13.....	.97	.76	.82	28.....	.91	.70	1.31
14.....	.89	.77	.88	29.....	.84	.70	1.22
15.....	.83	.80	.76	30.....	.99	.73	1.13
				31.....	.98	.73	.....

MUD CREEK AT SAVONA

Location.—On the farm of L. R. Travis in the town of Savona, Steuben county, about half mile above the mouth.

Drainage area.—Not determined.

Records available.—July 8, 1918, to September 30, 1918.

Gage.—Vertical staff secured to 8-inch by 8-inch timber planted in concrete at the water's edge on the left bank, 150 feet up-stream from farm bridge; read by L. R. Travis.

Discharge measurements.—Made by wading at the gage or from farm bridge.

Channel and control.—Fairly well compacted gravel and not likely to shift. Considerable grass growth in stream bed. Control probably submerged by back-water from the Cohocton river during extreme floods.

Ice.—Stage discharge relation affected by ice.

Regulation.—Grist mills at Bradford, seven miles upstream cause some diurnal fluctuation in flow.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Lamoka Electric Power Corporation.

Sufficient data have not been obtained for determination of discharge.

Discharge measurements of Mud Creek at Savona, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	Sec.-ft.
July 19.....	E. D. Burchard.....	3.53	18.4
Aug. 18.....	C. C. Covert.....	3.49	14.3

Daily gage height, in feet, of Mud Creek at Savona, for the year ending September 30, 1918

DAY	July	Aug.	Sept.	DAY	July	Aug.	Sept.
1.....		3.54	3.60	16.....	3.54	3.60	3.40
2.....		3.52	3.46	17.....	3.54	3.63	3.50
3.....		3.50	3.48	18.....	3.54	3.50	3.59
4.....		3.58	3.53	19.....	3.52	3.48	3.47
5.....		3.54	3.50	20.....	3.58	3.50	4.23
6.....		3.58	3.48	21.....	3.56	3.52	4.05
7.....		3.56	3.50	22.....	3.50	3.52	3.70
8.....	3.54	3.52	3.52	23.....	3.51	3.66	3.55
9.....	3.56	3.54	3.47	24.....	3.72	3.48	3.56
10.....	3.63	3.62	3.48	25.....	4.04	3.46	3.53
11.....	3.59	3.52	3.47	26.....	3.76	3.47	3.76
12.....	3.66	3.50	3.47	27.....	3.60	3.60	3.68
13.....	3.60	3.50	3.58	28.....	3.54	3.49	3.59
14.....	3.62	3.62	3.48	29.....	3.52	3.50	3.57
15.....	3.54	3.51	3.42	30.....	3.62	3.50	3.48
				31.....	3.62	3.48	.....

ALLEGHENY RIVER AT RED HOUSE

Location.—At highway bridge in Red House, Cattaraugus county, about 5 miles below Salamanca and 13 miles above the boundary between New York and Pennsylvania. Conewango creek, the outlet of Chautauqua lake, enters the Allegheny in Pennsylvania about 30 miles below the station.

Drainage area.—1,640 square miles.

Records available.—September 4, 1903, to September 30, 1918.

Gage.—Gurley seven-day water-stage recorder on the left bank just below the highway bridge, installed September 3, 1917. Prior to this date, chain gage attached to the upstream side of bridge near left end. Recorder inspected by W. E. Coe.

Extremes of discharge.—Maximum stage recorded during year, 11.70 feet at 5 A. M., March 15 (discharge, 30,000 second-feet) minimum stage recorded, 3.1 feet from 10 A. M. to 5 P. M., July 24 (discharge, 260 second-feet).

1903–1918: Maximum stage recorded, 12.7 feet, March 26, 1913 (discharge, about 40,000 second-feet); minimum stage recorded, 2.7 feet on several days in December, 1908 (discharge, about 100 second-feet).

Ice.—Stage-discharge relation somewhat affected by ice.

Regulation.—Low water flow may be slightly affected by the operation of several small power plants above Salamanca. At Olean a wasteway from Cuba reservoir enters the river through Olean creek. This reservoir is on the divide between Oil creek, tributary to Allegheny river, and Genesee river, tributary to Lake Ontario. The stored water is commonly turned into Genesee River through the abandoned summit level of Genesee River canal, or may be diverted into Oil creek through a guard lock at the head of the canal.

Accuracy.—Stage-discharge relation practically permanent between dates of shifting; affected by ice during most of the period from December to February. Rating curve well defined between 300 and 900 second-feet and between 6,000 and 15,000 second-feet. Operation of water stage recorder satisfactory. Daily gage height determined by inspection of hydrograph record. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except for periods when the stage-discharge relation was affected by ice, when results were fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Allegheny River at Red House, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft</i>
Dec. 21.....	E. D. Burchard.....	4.37	958
Jan. 21 ^a	do.....	4.47	374
Feb. 28.....	do.....	7.37	9,900
28.....	do.....	7.30	9,500
Mar. 20.....	do.....	6.26	6,170
May 28.....	J. W. Moulton.....	5.06	5,300
June 21.....	E. D. Burchard.....	3.58	657
Aug. 22.....	do.....	3.32	408

^a Measurement made through complete ice cover.

Daily discharge, in second-feet, of Allegheny River at Red House, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	340	15,000	1,460	800	360	10,600	1,740	1,660	2,240	992	635	518
2.....	402	10,200	1,870	750	340	13,300	1,710	1,580	2,110	918	481	675
3.....	410	7,260	1,480	650	380	13,300	1,640	1,460	1,840	836	392	635
4.....	655	4,930	1,420	600	360	11,000	2,160	1,310	1,490	727	461	551
5.....	1,050	3,940	1,350	480	340	8,230	2,250	1,240	1,370	655	1,510	585
6.....	1,010	3,180	1,170	550	340	9,250	2,030	1,240	1,220	625	1,360	1,550
7.....	998	2,780	998	550	360	10,200	1,860	1,240	1,240	517	894	1,370
8.....	878	2,490	775	700	380	7,440	1,770	1,220	1,460	509	780	980
9.....	844	2,160	700	750	420	6,540	1,920	1,210	1,160	490	1,040	802
10.....	817	1,990	700	600	460	11,600	2,110	1,460	980	490	942	696
11.....	786	1,830	750	400	800	9,600	1,970	2,480	905	528	905	605
12.....	783	1,680	800	360	1,700	8,070	2,030	2,980	1,180	518	1,100	576
13.....	1,170	1,540	850	320	6,500	9,250	2,110	2,820	1,920	490	1,070	1,250
14.....	1,440	1,410	850	360	9,000	23,400	3,660	2,290	1,580	445	870	2,330
15.....	1,290	1,290	850	380	9,600	28,400	5,290	2,020	1,160	400	980	1,640
16.....	2,070	1,250	800	380	8,900	21,800	5,290	1,910	1,000	378	1,020	1,480
17.....	1,920	1,210	800	380	5,830	15,100	5,420	1,800	942	362	859	3,090
18.....	1,480	1,170	750	380	3,310	9,600	5,530	1,770	942	340	696	3,630
19.....	1,790	1,100	750	380	3,540	7,140	5,560	1,740	848	325	595	2,620
20.....	7,510	1,040	750	380	18,800	5,970	5,290	1,330	691	299	518	3,420
21.....	7,530	1,010	1,100	380	16,800	5,420	4,770	1,430	685	292	481	4,640
22.....	6,170	1,080	1,700	380	12,900	5,160	4,270	2,290	2,580	280	427	4,020
23.....	4,550	1,280	1,700	330	8,900	4,640	3,780	3,310	4,820	266	409	3,200
24.....	5,080	1,280	1,900	360	8,230	4,140	3,510	4,520	3,740	292	392	2,580
25.....	10,200	1,180	2,800	330	6,990	3,660	3,200	4,400	2,600	1,140	370	2,220
26.....	10,200	1,170	2,600	380	10,900	3,200	2,680	5,530	2,010	1,020	332	2,110
27.....	12,800	938	2,000	400	11,000	2,840	2,350	7,140	1,690	675	325	2,310
28.....	17,800	1,080	1,600	400	9,600	2,510	2,110	5,160	1,420	500	299	2,200
29.....	18,800	1,100	1,400	400	.....	2,270	1,870	3,660	1,210	409	378	1,860
30.....	23,800	1,130	1,200	380	.....	2,040	1,770	2,830	1,080	716	566	1,580
31.....	21,800	.....	950	330	.....	2,040	.....	2,660	.....	665	538	.....

NOTE — Discharge December 9 to February 14 estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for nearby streams.

Monthly discharge of Allegheny River at Red House, for the year ending September 30, 1918
[Drainage area 1,640 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	23,800	340	5,370	3.27	3.77
November.....	15,000	938	2,620	1.60	1.78
December.....	2,800	700	1,250	.762	.88
January.....	800	320	462	.282	.33
February.....	18,800	340	5,610	3.42	3.56
March.....	28,400	2,040	8,960	5.46	6.30
April.....	5,560	1,640	3,060	1.87	2.09
May.....	7,140	1,210	2,510	1.53	1.76
June.....	4,820	685	1,610	.982	1.10
July.....	1,140	266	553	.337	.39
August.....	1,540	299	699	.426	.49
September.....	4,640	538	1,860	1.13	1.26
The year.....	28,400	266	2,860	1.74	23.71

CATTARAUGUS CREEK AT VERSAILLES

Location.—At the three-span highway bridge in the village of Versailles, Cattaraugus county, 2¼ miles above the mouth of Clear creek, about 6 miles below Gowanda, and about 8 miles above the mouth of the stream.

Drainage area.—467 square miles. (Measured on Post Route map.)

Records available.—September 23, 1910, to September 30, 1918.

Gage.—Chain, on up-stream side of right span of bridge; read by Charles Wilson.

Discharge measurements.—Made from the down-stream side of bridge or by wading.

Channel and control.—Rock and gravel; shifting.

Extremes of discharge.—Maximum stage recorded during year 12.0 feet at 8 A. M., February 13. Stage-discharge relation affected by ice; discharge, not computed; minimum stage recorded during year, 4.35 feet several times in August; discharge, about 49 second-feet.

1910–1918: Maximum open-water stage recorded, 11.6 feet at 5:40 P. M., March 25, 1918; discharge, about 30,000 second-feet; minimum stage recorded, 4.35 feet several times in August, 1918; discharge, about 49 second-feet.

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation not permanent. Affected by ice during large portion of the period from December to March, inclusive. Gage read to half-tenths daily. Daily discharge throughout the year ascertained by indirect method of applying mean daily effective gage heights to rating table. Effective gage heights determined from discharge measurements. Results, fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Cattaraugus Creek at Versailles, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis- charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 22 a.....	E. D. Burchard.....	6.43	233
Mar. 1.....	do.....	6.18	1,950
May 29.....	do.....	4.99	333
29.....	do.....	4.99	347
Aug. 22.....	do.....	4.45	78.1
22.....	do.....	4.50	78.4
22.....	do.....	4.60	117

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of Cattaraugus Creek at Versailles, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	190	1,900	1,400	380	220	1,800	480	300	280	240	180	120
2.....	170	1,500	1,000	340	220	1,100	650	280	240	220	150	85
3.....	190	1,300	650	340	220	1,500	550	240	200	180	140	85
4.....	1,600	1,100	600	360	220	950	500	240	200	150	140	100
5.....	1,200	1,000	500	360	220	2,400	460	240	200	150	160	160
6.....	1,000	900	480	340	220	4,000	400	240	220	120	130	300
7.....	800	900	420	320	220	1,800	380	280	200	130	85	170
8.....	380	750	280	320	220	1,000	380	380	200	110	100	110
9.....	380	700	280	320	380	1,200	420	280	170	140	180	110
10.....	340	700	320	320	1,500	2,000	340	320	200	220	150	65
11.....	280	650	380	320	3,200	1,400	380	500	180	280	140	100
12.....	300	600	400	320	1,700	1,400	420	380	500	200	180	85
13.....	500	550	480	320	2,000	3,400	420	460	440	160	140	140
14.....	850	500	550	300	2,200	16,000	900	700	320	150	120	180
15.....	900	500	550	300	2,600	4,000	800	400	260	100	80	160
16.....	1,100	550	600	260	1,500	1,400	600	300	200	120	55	170
17.....	650	550	650	260	1,000	1,200	480	300	200	140	65	440
18.....	420	500	750	240	800	1,200	800	280	200	120	80	360
19.....	1,100	550	850	240	900	1,100	600	240	170	110	65	320
20.....	2,100	500	1,200	240	2,600	1,400	460	1,000	160	100	80	550
21.....	900	480	2,400	240	1,500	1,400	400	550	160	100	75	420
22.....	700	550	2,200	240	2,200	1,200	550	340	340	85	80	380
23.....	650	750	1,500	240	4,400	950	600	900	420	95	110	360
24.....	1,600	650	1,500	240	4,400	750	550	440	300	95	80	340
25.....	3,600	500	3,400	240	3,900	700	500	340	240	340	65	440
26.....	2,800	500	1,700	240	7,000	600	400	950	180	160	80	300
27.....	5,500	380	1,000	240	2,000	600	380	650	180	130	65	440
28.....	6,000	550	800	220	1,800	600	320	420	160	220	65	500
29.....	8,500	500	550	220	.....	550	300	300	170	160	95	320
30.....	10,000	550	500	220	.....	550	300	300	180	800	160	260
31.....	3,400	.....	440	220	.....	500	.....	280	.....	280	85	.....

NOTE.— Discharge computed throughout the year by the indirect method of applying a corrected daily gage height to the rating table. Correction determined by discharge measurements and study of gage height graph, and for the winter period by study of weather records.

Monthly discharge of Cattaraugus Creek at Versailles, for the year ending September 30, 1918
[Drainage area 467 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	10,000	170	1,870	4.00	4.61
November.....	1,900	380	720	1.54	1.72
December.....	3,400	280	914	1.96	2.26
January.....	380	220	282	.631	1.73
February.....	4,400	220	1,760	3.78	3.94
March.....	16,000	500	1,890	4.05	4.67
April.....	900	300	491	1.05	1.17
May.....	1,000	240	414	.877	1.01
June.....	500	160	236	.505	.56
July.....	800	85	181	.388	.45
August.....	180	55	107	.229	.26
September.....	550	65	252	.540	.60
The year.....	16,000	55	756	1.62	21.98

LITTLE TONAWANDA CREEK AT LINDEN

Location.—At the stone arch highway bridge in the village of Linden, Genesee county, about 3 miles above the junction with Tonawanda creek.

Drainage area.—22 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—July 8, 1912, to September 30, 1918.

Gage.—Vertical staff, on up-stream side of right abutment. Lower two-feet of enameled iron, graduated to hundredths of foot; upper four-feet of bronze, graduated to half-tenths; read by C. L. Schenck.

Discharge measurements.—High-water measurements made from cable 1,000 feet above gage. Low-water measurements made by wading near gage.

Channel and control.—A standard Francis weir 2.01 feet long and 8 inches high has been constructed under the up-stream side of the bridge. When the water over-tops this weir it flows over a 2-inch plank about 13 feet long, including the two feet of weir.

The weir was entirely destroyed by ice February 20, 1918, and has not been replaced. The section of the channel which forms the control since the destruction of the weir is of coarse gravel and boulders, and is probably permanent between dates of shift.

Extremes of discharge.—Maximum stage recorded during year, 7.45 feet at 8 P. M., February 19; stage-discharge relation affected by ice; discharge not determined; minimum stage recorded, —0.46 foot at 8 P. M. August 20; discharge, 0.5 second-foot.

1912–1918: Maximum stage determined by leveling from flood marks, 14.6 feet during the flood of April 22, 1916; discharge, about 2,400 second-feet; minimum stage recorded, 0.18 foot August 20 and 21, September 14 to 16, and October 9, 1913; discharge, 0.43 second-foot.

Accuracy.—Stage discharge relation permanent. Rating curve for weir in good condition, well defined up to 250 second-feet and fairly well defined between 250 and 750 feet; rating curve for period after the weir was destroyed fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good for period when weir was in good condition and fairly good for remainder of year.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Engineer and Surveyor.

Discharge measurements of Little Tonawanda Creek at Linden, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
March 4.....	E. D. Burchard.....	0.26	41
19.....	do.....	0.86	106
19.....	do.....	0.94	116
19.....	do.....	1.02	128
19.....	do.....	1.12	140
19.....	do.....	1.18	147
May 31.....	do.....	—0.24	6.8
31.....	do.....	—0.24	6.8
July 23.....	C. C. Covert.....	—0.39	0.70
Aug. 21.....	E. D. Burchard.....	—0.47	0.60

Daily discharge, in second-feet, of Little Tonawanda Creek at Linden, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1.51	51	43	9.0	4.2	33	25	9.2	5.9	5.9	1.2	.9
2.....	1.45	41	21	8.4	4.6	105	43	8.7	4.7	4.3	1.0	.8
3.....	1.51	34	12	7.8	3.6	52	25	8.2	4.0	3.2	1.0	.6
4.....	2.25	27	11	7.2	3.6	38	18	7.8	3.8	3.0	1.2	.6
5.....	2.86	24	10	6.6	3.48	79	15	7.4	3.8	2.7	1.3	1.3
6.....	3.28	21	9.7	6.6	3.6	203	14	6.6	5.9	2.1	1.0	1.2
7.....	2.38	19	8.4	7.2	4.6	50	13	7.4	7.4	2.1	.9	.8
8.....	2.12	16	8.7	6.6	5.1	56	16	8.2	5.1	2.1	.9	.8
9.....	2.25	16	6.1	6.6	6.1	32	14	7.0	4.3	2.7	1.9	.6
10.....	2.18	15	7.2	6.6	9.7	158	13	22	5.1	3.2	1.3	.6
11.....	2.12	13	9.0	7.2	25	77	14	17	4.3	2.7	3.2	.6
12.....	2.32	13	9.0	7.8	.....	585	15	14	75	2.7	.9	.8
13.....	3.36	12	9.0	6.6	.....	203	38	15	21	2.1	.8	1.5
14.....	7.8	11	9.0	6.4	.....	740	44	12	16	1.9	.8	.9
15.....	8.4	12	9.0	6.1	.....	97	25	9.2	11	1.9	.8	.9
16.....	9.7	13	8.1	6.1	.....	63	15	8.2	7.4	1.9	.6	1.6
17.....	6.1	13	8.1	5.9	.....	73	22	7.4	5.9	1.9	.6	2.1
18.....	5.6	13	8.1	5.6	.....	65	80	6.6	5.1	1.6	.6	1.3
19.....	12	13	8.4	5.3	.....	110	32	6.2	4.0	1.6	.6	1.6
20.....	19	12	13	5.6	.....	108	21	5.9	3.8	1.6	.5	3.8
21.....	11	12	35	5.6	.....	71	21	5.1	4.3	1.3	.6	3.0
22.....	7.2	17	39	5.1	.....	60	25	5.1	8.2	1.3	1.3	2.1
23.....	7.8	18	23	5.1	.....	42	19	6.6	7.4	1.3	.8	1.6
24.....	154	13	37	5.1	.....	32	19	5.1	5.9	1.3	.8	2.7
25.....	164	12	59	4.6	.....	30	17	5.9	4.3	1.3	.8	3.2
26.....	154	11	24	4.9	115	25	14	22	3.8	1.3	.6	3.2
27.....	135	10	18	4.9	88	21	13	15	3.5	1.2	.6	3.2
28.....	135	10	13	4.9	46	26	11	10	3.2	1.0	.6	3.2
29.....	144	10	12	4.6	.....	25	10	7.8	3.0	2.1	.9	2.7
30.....	288	14	11	4.2	.....	26	9.2	8.2	3.0	2.1	.8	2.4
31.....	83	.....	9.7	4.4	.....	25	.....	6.6	.....	1.5	1.0	.....

NOTE.— Mean discharge February 12–25, inclusive, estimated 141 second-feet because of ice lodged against weir. Weir carried out by ice February 20.

Monthly discharge of Little Tonawanda Creek at Linden, for the year ending September 30, 1918
[Drainage area, 22.0 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	288	1.45	44.6	2.03	2.34
November.....	51	10	17.2	.782	.87
December.....	59	6.1	16.9	.768	.86
January.....	9.0	4.2	6.1	.277	.32
February.....	.....	3.48	82	3.73	3.88
March.....	740	21	107	4.86	5.60
April.....	80	9.2	22	1.00	1.12
May.....	22	5.1	9.39	.427	.49
June.....	75	3.0	8.34	.379	.42
July.....	5.9	1.0	2.16	.098	.11
August.....	3.2	.5	.964	.044	.05
September.....	3.5	.6	1.69	.077	.09
The year.....	740	0.5	26.2	1.19	16.15

GENESEE RIVER AT SCIO

Location.—At the steel highway bridge, $\frac{1}{2}$ mile above Vandermark creek, $\frac{1}{2}$ mile above village of Scio, Allegheny county, and 1 mile above Knight creek.

Drainage area.—297 square miles. (Measured on U. S. G. S. map of State of New York.)

Records available.—June 12, 1916, to September 30, 1918.

Gage.—Vertical staff attached to down-stream face of left bridge abutment; read by Miss Retta B. Potter.

Discharge measurements.—Made from down-stream side of the bridge at medium and high stages and by wading at low stages.

Channel and control.—Coarse gravel and probably permanent.

Extremes of discharge.—Maximum stage recorded during the year, 9.0 at 8 A. M., March 14; discharge, 10,400 second-feet; minimum stage recorded, 0.58 foot at 5 P. M., August 28; discharge, 38 second-feet.

1916-1918: Maximum stage recorded, 9.0 feet at 8 A. M., March 14; discharge, 10,400 second-feet; minimum stage recorded, 0.58 foot at 5 P. M., August 28; discharge, 38 second-feet.

Ice.—Stage-discharge relation affected by ice.

Accuracy.—Stage-discharge relation practically permanent. Affected by ice during a large portion of the period from December to March, inclusive. Rating curve well defined between 25 and 5,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage-height to rating table. Results good, except for periods when the stage-discharge relation is affected by ice, when results are fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Conservation Commission.

Discharge measurements of Genesee River at Scio, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 22 ^a	E. D. Burchard.....	1.83	186
Jan. 19 ^a	do.....	2.05	55
Mar. 5.....	do.....	2.02	609
May 27.....	J. W. Moulton.....	1.61	346
June 21.....	E. D. Burchard.....	0.74	74
21.....	do.....	0.74	73
Aug. 23.....	do.....	.69	58.7
23.....	do.....	.69	58.2

^a Measurement made through complete ice cover.

Daily discharge, in second-feet, of Genesee River at Scio, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	61	1,150	361	120	46	6,300	572	460	465	345	61	178
2.....	74	2,680	312	100	46	1,360	545	440	279	322	41	74
3.....	64	1,310	265	120	46	1,150	920	360	218	300	41	71
4.....	91	690	198	95	46	780	850	340	200	279	41	66
5.....	265	545	178	85	46	660	660	340	238	258	440	74
6.....	121	386	158	75	46	1,680	600	360	322	238	147	264
7.....	98	438	180	75	46	780	572	400	518	218	87	147
8.....	88	438	120	75	46	690	600	360	415	200	87	116
9.....	118	386	140	70	60	750	720	320	518	200	147	113
10.....	101	336	140	70	160	815	750	320	518	132	102	113
11.....	88	336	160	65	380	750	850	320	415	74	218	116
12.....	202	288	120	70	1,300	1,150	815	500	415	61	147	116
13.....	312	242	120	65	1,800	1,490	780	650	279	41	147	147
14.....	190	265	140	65	1,310	10,000	690	550	200	61	147	164
15.....	861	242	160	60	2,608	2,888	780	440	150	41	147	147
16.....	490	220	140	65	1,310	1,070	1,490	340	120	41	147	141
17.....	312	242	160	60	1,150	885	1,490	300	85	41	116	300
18.....	251	198	160	150	990	750	1,880	260	60	61	116	258
19.....	1,580	265	140	55	750	720	1,880	340	60	41	116	218
20.....	2,680	158	140	84	8,070	720	1,990	600	60	41	87	2,540
21.....	1,150	178	100	38	990	720	1,780	550	77	41	87	750
22.....	850	220	180	42	850	750	1,580	500	322	41	87	518
23.....	990	242	240	46	780	750	1,230	1,310	279	41	61	440
24.....	2,100	265	500	48	815	750	750	780	258	41	61	390
25.....	2,100	312	440	46	720	720	720	440	200	61	61	345
26.....	1,880	312	220	46	4,560	630	600	518	200	61	41	300
27.....	3,570	336	150	46	1,150	600	550	440	200	41	41	300
28.....	4,130	312	140	46	815	630	500	390	181	41	39	238
29.....	3,440	336	110	46	.....	600	460	465	181	41	43	238
30.....	2,920	312	130	46	.....	572	440	465	238	61	74	218
31.....	1,680	.....	120	46	.....	572	.....	390	.....	61	119	.....

NOTE.—Discharge December 7 to February 13 estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for stations down stream. Discharge April 27 to May 22 and June 14 to 20, estimated by study of gage height graph.

Monthly discharge of Genesee River at Scio, for the year ending September 30, 1918
[Drainage area, 297 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	4,130	61	1,040	3.50	4.04
November.....	2,680	158	455	1.53	1.71
December.....	500	100	188	.633	.73
January.....	150	34	67	.226	.26
February.....	8,070	46	1,110	3.74	3.90
March.....	10,000	572	1,360	4.58	5.28
April.....	1,990	440	935	3.15	3.51
May.....	1,310	260	460	1.55	1.79
June.....	518	60	256	.862	.96
July.....	345	41	114	.384	.44
August.....	440	39	106	.357	.41
September.....	2,540	66	303	1.02	1.14
The year.....	10,000	34	529	1.78	24.17

GENESEE RIVER AT ST. HELENA

Location.—At the steel highway bridge in the hamlet of St. Helena, Wyoming county, about 5½ miles below the village of Portageville and the site of the proposed storage dam of the State of New York Conservation Commission, and 9½ miles above the mouth of Canaseraga creek.

Drainage area.—1,030 square miles.

Records available.—August 14, 1908, to September 30, 1918.

Gage.—Stevens water-stage recorder on left bank just below bridge and a chain gage fastened to the up-stream side of the bridge; middle span chain gage installed August 14, 1908; water-stage recorder installed August 24, 1911. Water-stage recorder inspected by C. S. DeGolyer. Chain gage read by Herman Piper.

Discharge measurements.—Made from the bridge at high stages and by wading at low and medium stages.

Channel and control.—Gravel and rocks; frequently shifting.

Extremes of discharge.—Maximum stage recorded during year, 11.4 feet at 5 P. M., March 14; discharge, about 29,500 second-feet; minimum stage recorded, 2.00 feet at 7 A. M., July 26, and 6 P. M., August 30; discharge, 40 second-feet.

1908–1918: Maximum stage, from water-stage recorder, 12.81 feet at 8 A. M., May 17, 1916; discharge, 43,500 second-feet; minimum stage recorded, 1.70 feet at 5 P. M., October 5, and 8 A. M., October 17, 1913; discharge, approximately 18 second-feet.

Ice.—Stage-discharge relation somewhat affected by ice.

Accuracy.—Stage-discharge relation not permanent. Rating curve well defined between 75 and 2,000 second-feet and fairly well defined between 2,000 and 30,000 second-feet. Chain gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table, except for days of great range in stage, when it was determined by averaging the results obtained by applying gage heights for two-hour periods to rating table. Results, fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Genesee River at St. Helena, during the year ending September 30, 1918

DATE	Made by	Chain gage height	Dis- charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 29.....	C. S. DeGolyer.....	7.68	10,800
Nov. 2.....	E. D. Burchard.....	4.97	2,950
14.....	C. S. DeGolyer.....	3.24	690
Dec. 12 ^a	do.....	3.52	379
Jan. 8 ^b	do.....	3.87	238
25 ^b	do.....	3.84	146
Feb. 8 ^b	do.....	3.68	153
13.....	do.....	7.53	9,860
Mar. 9.....	do.....	4.56	2,200
13.....	do.....	6.15	5,750
15.....	do.....	9.78	19,300
April 27.....	do.....	3.55	880
May 25.....	J. W. Moulton.....	3.44	774
30.....	C. S. DeGolyer.....	3.16	588
June 27.....	do.....	2.76	319
July 13.....	E. D. Burchard.....	2.51	194
13.....	do.....	2.50	191
25.....	C. S. DeGolyer.....	2.15	71
Aug. 21.....	E. D. Burchard.....	2.40	144
28.....	C. S. DeGolyer.....	2.10	57.6
Sept. 20.....	do.....	3.23	579

^a Measurement made through partial ice cover.
^b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Genesee River at St. Helena, for the year ending September 30 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	245	3,980	760	220	150	5,320	790	555	520	257	132	109
2.....	268	2,950	1,040	200	190	5,320	882	628	425	262	140	103
3.....	261	2,420	670	190	170	4,100	882	555	401	199	126	182
4.....	511	1,980	590	200	160	2,100	980	488	346	182	115	136
5.....	895	1,640	590	200	140	2,260	930	455	329	186	225	182
6.....	805	1,440	475	260	240	5,850	745	443	351	154	451	214
7.....	630	1,290	392	240	190	3,660	665	488	384	154	293	335
8.....	510	1,120	309	240	170	1,960	665	555	431	91	209	282
9.....	573	1,000	221	280	170	2,180	790	443	384	170	190	214
10.....	622	940	240	190	180	10,400	980	520	346	150	186	209
11.....	489	868	320	240	240	3,050	790	590	329	190	178	166
12.....	447	760	360	260	850	3,050	745	590	745	182	281	228
13.....	820	670	240	220	15,400	6,420	882	665	835	174	257	218
14.....	931	670	240	220	4,810	26,000	2,480	980	530	147	204	346
15.....	796	630	300	260	10,400	14,800	5,530	705	407	149	182	329
16.....	1,540	805	220	220	3,450	3,840	4,060	555	335	134	278	329
17.....	1,150	590	320	240	1,680	2,830	2,830	443	329	126	228	373
18.....	823	510	280	220	1,140	2,830	5,010	395	292	123	190	1,130
19.....	1,090	590	280	280	1,300	3,020	2,650	384	247	122	166	1,080
20.....	9,170	550	240	150	25,400	2,830	1,930	455	232	111	154	835
21.....	3,830	630	380	240	4,810	2,830	1,590	882	228	112	140	2,100
22.....	2,180	630	650	300	1,810	2,830	1,860	745	419	106	143	1,080
23.....	1,690	760	750	220	1,360	2,150	1,590	1,240	1,030	109	129	808
24.....	4,470	670	750	190	1,540	1,590	1,470	1,180	628	103	122	650
25.....	8,820	380	1,200	130	1,420	1,350	1,300	745	455	100	115	628
26.....	7,040	447	1,100	190	11,500	1,180	1,080	745	362	97	110	605
27.....	10,700	332	650	170	4,100	1,030	882	1,130	308	143	104	808
28.....	12,000	440	440	170	3,050	930	745	835	247	122	98	781
29.....	10,800	428	360	160	.....	882	665	590	257	109	103	628
30.....	12,300	496	320	170	.....	835	628	555	242	122	115	507
31.....	6,500	.....	260	180	.....	835	.....	665	.....	136	103	.....

NOTE.— Discharge November 11 to July 13, and August 31 to September 20, determined from chain gage heights. Discharge December 10 to February 12, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Scio and Jones Bridge.

Monthly discharge of Genesee River at St. Helena, for the year ending September 30, 1918
[Drainage area, 1,030 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	12,300	245	3,320	3.22	3.71
November.....	3,980	382	1,020	.990	1.10
December.....	1,200	220	482	.468	.54
January.....	300	130	215	.209	.24
February.....	25,400	140	3,430	3.33	3.47
March.....	26,000	835	4,140	4.02	4.64
April.....	5,530	628	1,570	1.52	1.70
May.....	1,240	384	650	.631	.73
June.....	1,030	228	412	.400	.45
July.....	262	91	146	.142	.16
August.....	451	98	176	.171	.20
September.....	2,100	103	520	.505	.56
The year.....	26,000	91	1,330	1.29	17.50

GENESEE RIVER AT JONES BRIDGE NEAR MT. MORRIS

Location.—At the highway bridge known as Jones bridge, 1½ miles below Canaseraga creek, about 1¾ miles above the mouth of Peads creek, about 5 miles below the village of Mt. Morris, Livingston county, and 6 miles by river, above the village of Geneseo.

Drainage area,—1,419 square miles.

Records available.—May 22, 1903, to April 30, 1906; August 12, 1909, to December 31, 1913; July 12, 1915, to September 30, 1918.

Gage.—Gurley seven-day water-stage recorder installed September 11, 1915, on the right bank about 60 feet down-stream from the bridge. Prior to 1915 a chain gage fastened to up-stream side of highway bridge was used. Datum of water-stage recorder is 2.73 feet higher than that for the former chain gage (540.00 feet Conservation Commission datum). Water-stage recorder inspected by Theron S. Trever.

Discharge measurements.—Made from foot bridge erected on the lower chord of the truss at the up-stream side of the bridge.

Channel and control.—Sandy clay, likely to shift, but as shown by measurements, fairly permanent in recent years.

Extremes of discharge.—Maximum stage during year estimated from record 25.5 feet at 3:30 A. M., February 21; stage-discharge relation affected by ice; discharge, not determined; minimum stage, 0.45 foot at 1 A. M., July 25; discharge, 63 second-feet.

1903-1918:* Maximum stage recorded, 25.44 feet at noon, May 17, 1916; discharge, 54,500 second-feet; minimum stage recorded, 2.7 feet at 6 P. M., August 29, 1909; discharge, about 18 second-feet.

Ice.—Stage-discharge relation affected by ice.

Regulation.—During extreme low water there is some diurnal fluctuation in flow from mills at Mt. Morris.

Accuracy.—Stage-discharge relation practically permanent between dates of shift. Affected by ice for a considerable portion of January, February, and March. Rating curve well defined between 150 and 7,000 second-feet and fairly well defined between 7,000 and 60,000 second-feet. Operation of the water-stage recorder satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights determined by inspecting the gage height hydrograph, or for days of considerable fluctuation by discharge integration.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Genesee River at Jones Bridge, near Mt. Morris, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Nov. 1.....	E. D. Burchard.....	11.12	6,040
1.....	J. W. Moulton.....	10.12	5,320
2.....	do.....	7.40	3,900
Dec. 19 a.....	E. D. Burchard.....	2.98	530
Jan. 16 a.....	do.....	2.59	318
Feb. 11 b.....	do.....	2.96	313
13 b.....	do.....	13.4	3,700
14 b.....	do.....	21.42	6,800
15 b.....	do.....	21.60	8,480
16 b.....	do.....	21.9	7,920
26 b.....	do.....	22.0	11,700
27 b.....	do.....	21.5	8,400
Mar. 2 b.....	do.....	19.21	6,970
Mar. 4 b.....	do.....	16.0	4,120
15.....	do.....	24.2	28,300
18.....	do.....	8.90	4,800
19.....	do.....	7.08	3,770
May 23.....	do.....	3.21	1,190
July 12.....	do.....	1.36	293
Aug. 21.....	do.....	.91	159

* Not including period of no record. See "Records available."

a Measurement made through complete ice cover.

b Ice jam on control.

Daily discharge, in second-feet of Genesee River at Jones Bridge near Mt. Morris, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	305	7,050	892	440	280	5,000	1,200	892	840	365	165	140
2.....	353	4,200	1,330	440	280	7,000	1,200	892	690	357	162	204
3.....	365	3,240	1,080	420	280	6,000	1,300	865	615	327	155	213
4.....	502	2,750	865	420	280	4,200	1,360	815	565	278	126	226
5.....	1,080	2,280	815	380	260	3,600	1,420	790	515	305	162	210
6.....	1,030	2,020	690	360	240	4,800	1,140	765	506	238	413	238
7.....	740	1,840	590	320	260	5,500	1,000	740	535	155	425	258
8.....	640	1,660	650	320	260	3,000	1,030	1,000	540	273	295	319
9.....	690	1,480	600	300	300	4,570	1,140	840	590	258	285	302
10.....	740	1,300	600	300	320	8,310	1,420	865	515	275	298	278
11.....	615	1,220	600	300	440	10,700	1,170	1,140	492	369	229	271
12.....	560	1,140	600	320	1,600	9,700	1,170	1,030	740	255	281	258
13.....	857	1,080	600	320	5,800	12,500	1,220	1,000	1,250	235	353	299
14.....	1,060	975	600	320	7,500	21,600	2,790	1,280	840	190	281	264
15.....	840	948	550	320	8,000	22,200	6,790	1,200	665	236	248	369
16.....	1,540	920	550	320	7,500	12,100	4,970	948	535	223	241	369
17.....	1,320	920	550	320	5,500	7,980	3,760	815	466	216	316	425
18.....	920	865	550	320	3,800	4,500	5,740	740	466	188	245	1,470
19.....	1,120	840	500	320	3,200	3,500	4,270	665	399	167	248	892
20.....	10,500	815	500	320	8,580	3,800	2,820	690	841	164	238	867
21.....	5,080	780	650	460	9,000	3,700	2,280	1,320	349	135	213	2,570
22.....	2,680	815	900	420	6,500	3,600	2,410	1,250	461	136	181	1,420
23.....	1,960	920	1,000	380	4,800	3,170	2,410	1,250	1,120	133	168	1,030
24.....	4,740	920	1,100	340	3,600	2,380	2,020	1,720	920	130	133	865
25.....	13,700	740	1,500	340	3,400	2,000	1,840	1,140	690	216	140	765
26.....	10,800	665	2,000	340	6,500	1,700	1,600	1,440	535	145	*	715
27.....	13,200	615	1,500	300	7,500	1,600	1,300	1,840	448	181	*	892
28.....	16,500	615	1,000	300	6,000	1,400	1,110	1,480	399	163	*	1,000
29.....	15,100	690	750	320	.....	1,400	1,080	1,030	365	181	*	790
30.....	17,800	715	550	320	.....	1,800	920	948	323	163	*	640
31.....	14,100	.....	500	320	.....	1,300	.....	948	.....	164	140	.....

* Estimated mean daily discharge, 140 sec.-ft.

NOTE.—Discharge December 8 to March 22 estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for St. Helena and Rochester. Mean discharge August 26–30 estimated 140 second-feet.

Monthly discharge of Genesee River at Jones Bridge near Mt. Morris, for year ending September 30, 1918
(Drainage area, 1,410 square miles)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	17,200	305	4,550	3.23	3.72
November.....	7,050	615	1,500	1.06	1.18
December.....	2,000	890	810	.575	.66
January.....	440	300	344	.244	.28
February.....	9,000	240	3,640	2.58	2.69
March.....	22,200	1,300	5,940	4.21	4.85
April.....	6,790	920	2,130	1.51	1.69
May.....	1,840	665	1,040	.738	.85
June.....	1,250	323	590	.418	.47
July.....	365	130	215	.152	.18
August.....	425	126	221	.157	.18
September.....	2,570	140	616	.437	.49
The year.....	22,200	126	1,780	1.26	17.19

GENESEE RIVER AT ROCHESTER

Location.—At the Elmwood Avenue bridge at the north end of South park, $3\frac{1}{4}$ miles below the mouth of Black creek, $3\frac{1}{2}$ miles above the center of the city of Rochester, Monroe county, and $7\frac{1}{2}$ miles above the mouth of the river.

Drainage area.—2,360 square miles.

Records available.—February 9, 1904, to September 30, 1918. Fragmentary records prior to this period published in Water Supply Papers 24, 65 and 97.

Gage.—Gurley water-stage recorder installed in December, 1910, in the pump house immediately below the bridge on the right bank. Recorder inspected by Geo. A. Bailey. Prior to December, 1910, a staff gage bolted to the down-stream end of the first pier from the right abutment. Elevation of zero of gage 506.848, Barge Canal datum, and 245.591, Rochester City datum.

Discharge measurements.—Made from down-stream side of the bridge. Prior to 1904, measurements and elevation of water surface taken in conjunction with the city of Rochester.

Channel and Control.—Smooth gravel, permanent. During spring of 1918, dredging operations were commenced on the control. These operations were continued through the summer, causing a gradual change in the rating as they progressed.

Extremes of discharge.—Maximum stage during year from water-stage recorder, 10.97 feet at 9:15 P. M., March 16; discharge, 27,900 second-feet; minimum stage from water-stage recorder, 0.42 feet during the afternoons of July 21 and 22; discharge, about 110 second-feet.

1904–1918: Maximum stage from water-stage recorder, 12.3 feet at midnight, March 30, 1916; discharge, 49,300 second-feet; minimum stage from water-stage recorder, 0.42 feet during the afternoons of July 21 and 22, 1918; discharge, about 110 second-feet.

Ice.—Stage-discharge relation affected by ice during a large part of the period from December to March, inclusive.

Accuracy.—Stage-discharge relation practically permanent. Affected by ice during a large portion of the period from December to March, inclusive. Rating curve well defined between 2,000 and 44,000 second-feet. Operation of water-stage recorder satisfactory throughout the year. Mean daily gage height ascertained by averaging hourly gage heights. Daily discharge prior to May, 1918, determined by applying mean daily gage height to rating table. Daily discharge, May to September, determined by the indirect method of applying corrected mean daily gage height to the rating table. Results good for periods when the stage discharge relation is not affected by ice or dredging on the control, and fairly good for other periods.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission. Water-stage recorder inspected by an employee of the Rochester Railway and Light Company.

Discharge measurements of Genesee River at Rochester, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Nov. 3.....	J. W. Moulton.....	4.05	4,970
Dec. 19 <i>a</i>	E. D. Burchard.....	1.99	865
Jan. 16 <i>b</i>	do.....	2.18	517
Feb. 11 <i>b</i>	do.....	1.63	400
Feb. 13 <i>a</i>	do.....	8.36	7,720
Mar. 22.....	do.....	4.59	6,440
May 22.....	do.....	2.36	1,680
June 20.....	do.....	1.12	742
July 12.....	do.....	1.14	764
20.....	do.....	1.20	675
27.....	do.....	.76	664
31.....	do.....	.60	666
Aug. 19.....	do.....	.49	597
26.....	do.....	.40	512
Sept. 24.....	do.....	1.21	1,580

a Measurement made through partial ice cover.

b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Genesee River at Rochester, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	531	14,900	1,480	850	360	8,060	2,340	1,500	900	750	480	550
2.....	510	8,330	1,980	750	360	7,540	2,500	1,500	1,100	850	480	550
3.....	553	5,130	2,010	750	400	9,430	2,500	1,400	950	850	480	550
4.....	619	3,880	1,620	700	340	8,330	2,340	1,400	850	850	480	550
5.....	776	3,300	1,480	700	420	5,930	2,340	1,300	850	850	480	550
6.....	1,380	2,850	1,280	600	420	6,050	2,040	1,200	900	900	500	550
7.....	1,340	2,590	1,150	550	420	8,330	1,860	1,100	950	800	900	550
8.....	1,070	2,340	1,320	600	400	7,800	1,840	1,100	950	700	1,100	550
9.....	958	2,180	1,340	650	440	5,700	1,900	1,300	850	750	1,000	550
10.....	920	2,000	1,300	650	440	5,130	2,040	1,100	850	800	650	550
11.....	980	1,890	1,100	650	420	8,870	2,000	1,200	900	800	500	550
12.....	896	1,760	1,000	600	1,200	8,060	1,980	1,500	850	750	500	550
13.....	812	1,680	1,000	600	7,500	15,600	2,060	1,500	1,100	800	500	550
14.....	1,110	1,580	1,000	600	11,200	19,200	3,490	1,200	1,400	700	500	550
15.....	1,370	1,510	1,000	550	13,600	23,000	6,900	850	1,400	750	750	550
16.....	1,250	1,450	1,000	550	14,000	27,200	5,930	1,200	1,100	800	700	550
17.....	1,920	1,440	950	550	12,100	25,100	5,240	1,700	950	700	650	550
18.....	1,620	1,400	900	550	8,060	14,900	7,930	1,200	950	700	650	700
19.....	1,240	1,340	850	500	5,090	7,800	7,030	1,000	900	650	600	1,600
20.....	3,680	1,330	800	500	8,870	6,530	4,700	800	800	550	600	1,300
21.....	8,870	1,270	900	500	12,400	6,290	3,680	1,000	800	550	550	1,600
22.....	4,600	1,300	1,200	500	13,600	6,050	3,400	1,400	950	300	550	2,800
23.....	2,760	1,410	1,700	500	11,200	5,130	3,490	1,800	800	480	500	2,200
24.....	2,500	1,550	1,800	480	6,290	4,080	3,120	1,700	1,400	750	500	1,800
25.....	10,600	1,450	2,200	480	4,600	3,490	2,850	1,700	1,400	800	500	1,400
26.....	14,900	1,200	3,000	460	7,800	3,120	2,500	1,100	1,200	800	500	1,400
27.....	13,300	1,040	3,200	440	11,200	2,850	2,180	1,500	900	650	550	1,300
28.....	14,300	1,060	2,200	420	11,800	2,680	1,960	2,200	800	650	550	1,500
29.....	15,300	1,070	1,800	420	.....	2,500	1,800	1,600	900	950	550	1,800
30.....	16,000	1,190	1,200	420	.....	2,420	1,650	1,500	800	600	550	1,500
31.....	17,000	.....	950	420	.....	2,340	.....	1,400	.....	650	550	.....

NOTE.—Discharge December 10 to February 13, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies upstream. Discharge May 1 to September 30 determined by indirect method of applying corrected daily gage height to rating table.

Monthly discharge of Genesee River at Rochester, for year ending September 30, 1918
 [Drainage area, 2,860 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	17,000	510	4,630	1.96	2.26
November.....	14,900	1,040	2,510	1.06	1.18
December.....	3,200	800	1,440	.610	.70
January.....	850	420	560	.239	.28
February.....	14,000	340	5,890	2.50	2.60
March.....	27,200	2,340	8,700	3.69	4.25
April.....	7,930	1,650	3,190	1.35	1.51
May.....	2,200	850	1,350	.572	.66
June.....	1,400	800	982	.416	.46
July.....	950	300	725	.307	.35
August.....	1,100	460	591	.250	.29
September.....	2,800	550	1,010	.428	.48
The year.....	27,200	300	2,610	1.11	15.02

CANASERAGA CREEK AT CUMMINSVILLE

Location.—At bridge on State road in village of Cumminsville, Livingston county, about 1 mile down-stream from station maintained as "Canaseraga Creek near Dansville" about 1½ miles below Mill brook and 21 miles above mouth of creek.

Drainage area.—171 square miles. (Measured by State Conservation Commission.)

Records available.—October 23, 1917, to September 30, 1918, at this station; and at station near Dansville, July 21, 1910, to December 31, 1912, and July 10, 1915, to December 29, 1917.

Gage.—Vertical staff gage in three sections on down-stream face of bridge pier graduated from 0 to 10.0. Read by George Freed.

Discharge measurements.—Made by wading below control at low and medium stages and from down-stream side of bridge at gage during high water.

Channel and control.—Rather well-compacted gravel and small boulders, practically permanent between dates of shift but liable to shift during severe floods.

Extremes of stage.—Maximum stage recorded during year, 5.2 feet at 3:30 P. M., February 12; stage-discharge relation affected by ice; minimum stage recorded during year, 0.7 foot several times in August and September.

Ice.—Stage-discharge relation affected by ice.

Accuracy.—Stage-discharge relation probably permanent between dates of shift. Affected by ice during a large part of the period from December to March. Gage read to tenths twice daily. Sufficient data for computing rating table not yet available.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Conservation Commission.

A sufficient number of discharge measurements have not been obtained for examination of discharge records.

Discharge measurements of Canaseraga Creek at Cumminsville, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sq.-ft.</i>
Oct. 20.....	E. D. Burchard.....	2.06	478
20.....	do.....	1.98	425
23.....	do.....	1.38	185
25.....	do.....	3.05	1,140
25.....	do.....	2.92	1,020
Dec. 20 <i>a</i>	do.....	1.44	120
Jan. 17 <i>a</i>	do.....	1.66	49
Feb. 12 <i>b</i>	do.....	4.60	782
Feb. 15.....	do.....	3.00	1,130
Mar. 18.....	do.....	1.63	269
Mar. 21.....	do.....	1.70	326
May 26.....	do.....	1.45	183
May 31.....	J. W. Moulton.....	1.21	88
July 15.....	E. D. Burchard.....	.89	38.2
Aug. 23.....	do.....	.77	24.7

a Measurement made through complete ice cover.

b Measurement made through partial ice cover.

Daily gage height, in feet, of Canaseraga Creek at Cumminsville, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....		1.78	1.18	1.95	1.50	2.10	1.38	1.12	1.28	.90	.90	.70
2.....		1.71	1.18	1.95	1.45	2.05	1.38	1.11	1.20	.90	.90	.70
3.....		1.57	1.18	2.10	1.45	2.00	1.38	1.10	1.10	.85	.90	.70
4.....		1.51	1.20	1.95	1.50	1.85	1.36	1.10	1.10	.80	.80	.70
5.....		1.52	1.19	1.99	1.50	1.90	1.30	1.10	1.10	.80	.85	.75
6.....		1.51	1.18	1.90	1.45	2.30	1.30	1.10	1.10	.80	.80	.80
7.....		1.48	1.18	1.80	1.54	1.95	1.34	1.08	1.10	.80	.80	.80
8.....		1.37	1.17	1.60	1.50	2.05	1.39	1.30	1.10	.80	.80	.80
9.....		1.37	1.31	1.60	1.50	1.90	1.39	1.20	1.10	.85	.80	.80
10.....		1.84	1.34	1.67	1.50	2.90	1.32	1.28	1.10	1.00	.80	.80
11.....		1.33	1.40	1.60	2.56	1.95	1.28	1.35	1.05	1.00	1.00	.80
12.....		1.32	1.46	1.85	4.43	2.70	1.29	1.30	1.40	.90	.95	.80
13.....		1.30	1.50	1.80	2.85	2.55	1.35	1.30	1.25	.90	.80	.99
14.....		1.28	1.70	1.60	2.20	4.00	1.80	1.30	1.20	.90	.80	.80
15.....		1.29	1.71	1.60	3.05	2.55	2.05	1.23	1.10	.90	.80	.80
16.....		1.26	1.70	1.60	2.00	1.90	1.90	1.20	1.00	.90	.80	.90
17.....		1.26	1.70	1.55	1.70	1.85	1.70	1.14	1.00	.85	.89	1.00
18.....		1.26	1.70	1.40	1.70	1.60	1.95	1.14	1.00	.90	.80	.90
19.....		1.27	1.71	1.45	2.90	1.60	1.72	1.13	.90	.90	.80	.80
20.....		1.23	1.50	1.50	3.90	1.64	1.55	1.24	.90	.90	.80	1.40
21.....		1.21	1.30	1.48	1.80	1.67	1.69	1.30	.90	.80	.70	1.10
22.....		1.27	1.30	1.50	1.70	1.83	1.59	1.30	1.00	.80	.70	.95
23.....		1.28	1.28	1.50	1.70	1.67	1.43	1.30	1.00	.80	.70	.90
24.....		1.25	1.83	1.50	1.70	1.55	1.38	1.40	1.00	.80	.70	.90
25.....		1.22	1.45	1.60	1.75	1.41	1.38	1.34	1.00	1.00	.70	.90
26.....		1.20	1.50	1.55	2.95	1.32	1.30	1.30	.95	.95	.70	.90
27.....		1.20	1.69	1.50	2.35	1.31	1.26	1.30	.90	.90	.70	.90
28.....	2.66	1.20	1.68	1.43	1.80	1.30	1.20	1.27	.90	.90	.70	.90
29.....	2.95	1.18	1.82	1.40		1.36	1.20	1.30	.90	.90	.70	.90
30.....	2.94	1.18	2.00	1.45		1.26	1.16	1.34	.90	1.00	.70	.90
31.....	2.25		2.00	1.50		1.38		1.30		.90	.80	

CANASERAGA CREEK AT GROVELAND STATION

Location.—At the highway bridge at Groveland Station, Livingston county. The creek is flowing through the improved channel at this point.

Drainage area.—195 square miles. Measured by engineers of the New York State Conservation Commission.

Records available.—August 5, 1915, to September 30, 1916, and March 1, 1917, to September 30, 1918.

Gage.—Chain, near center of down-stream side of bridge. Prior to March 30, 1916, inclined staff gage on right bank about 400 feet above the bridge, at practically the same datum (560.00 Conservation Commission datum); read by Thomas Maimone.

Discharge measurements.—Made from highway bridge at medium and high stages and by wading at low stages.

Channels and control.—Gravel; likely to shift.

Extremes of discharge.—Maximum stage recorded during year, 19.01 feet at 7 A. M., February 13; stage-discharge relation affected by ice; discharge, not determined; minimum stage recorded, 6.3 feet at 6 P. M., August 20 and 30; discharge, about 24 second-feet.

1915–1918: Maximum discharge recorded, 4,170 second-feet, from 2 to 3 P. M., July 29, 1917; gage height, 16.5 feet; minimum stage recorded, 6.3 feet at 6 P. M., August 20 and 30; discharge, about 24 second-feet.

Ice.—Stage-discharge relation affected by ice. Gage observations suspended.

Accuracy.—Stage-discharge relation not permanent. Affected by ice, December to March, and by shifting channel during the remainder of the year. Rating curve well defined between 35 and 3,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table for the period previous to the winter, and for the remainder of the year by the indirect method of applying a corrected mean daily gage height to the rating table. Results, fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Canaseraga Creek at Groveland Station, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 25.....	E. D. Burchard.....	12.59	1,200
25.....	do.....	12.50	1,190
31.....	do.....	10.42	678
31.....	do.....	10.30	637
Nov. 1.....	do.....	9.08	418
Mar. 16 ^a	do.....	11.11	400
18.....	do.....	8.91	314
21.....	do.....	9.30	394
May 24.....	do.....	7.61	118
June 23.....	do.....	7.30	88
July 15.....	do.....	6.64	36
Aug. 24.....	do.....	6.52	29

^a Slush ice in the current and flats below flooded, causing backwater.

Daily discharge, in second-feet, of Canaseraga Creek at Groveland Station for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Mar.	April	May	June	July	Aug.	Sept.
1.....	54	474	179	.....	200	95	85	42	32	24
2.....	54	365	187	.....	200	100	70	40	32	26
3.....	47	328	155	.....	190	85	60	38	32	26
4.....	116	292	155	.....	180	75	55	38	34	28
5.....	109	274	124	.....	130	70	60	36	32	36
6.....	102	256	124	.....	120	65	60	36	30	36
7.....	139	238	109	.....	110	70	60	36	28	.....
8.....	124	204	179	.....	120	170	55	36	28	.....
9.....	124	196	.....	.....	200	95	50	48	60	.....
10.....	95	196	.....	.....	140	120	55	70	32	.....
11.....	139	184	.....	.....	200	110	60	50	32	.....
12.....	109	171	.....	.....	140	120	200	42	32	.....
13.....	139	171	.....	.....	180	130	120	38	32	.....
14.....	95	155	.....	.....	650	140	90	36	28	.....
15.....	95	155	.....	.....	650	100	65	36	28	.....
16.....	139	163	.....	400	420	95	60	34	28	.....
17.....	102	155	.....	320	300	75	55	40	26	.....
18.....	83	147	.....	300	550	65	44	42	26	36
19.....	460	155	.....	300	320	65	44	36	28	80
20.....	536	139	.....	360	260	100	44	32	22	150
21.....	256	155	.....	380	240	190	48	32	28	65
22.....	204	155	.....	400	220	170	95	32	28	46
23.....	171	163	.....	300	200	170	75	32	28	40
24.....	975	139	.....	240	190	110	65	40	28	40
25.....	1,610	139	.....	220	190	85	60	65	28	36
26.....	1,090	155	.....	200	150	260	48	42	26	38
27.....	1,320	139	.....	170	110	300	50	36	28	40
28.....	1,000	139	.....	190	100	160	44	34	24	38
29.....	1,130	124	.....	170	90	150	44	34	24	36
30.....	1,490	139	.....	200	90	120	42	40	22	36
31.....	675	.....	.....	200	.....	110	.....	36	24	.....

NOTE.— Discharge December 9 to March 15 not determined because of ice. Mean discharge September 7-17, estimated 36 second-feet.

Monthly discharge of Canaseraga Creek at Groveland Station, for the year ending September 30, 1918
[Drainage area, 195 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	1,610	47	412	2.11	2.43
November.....	479	124	196	1.00	1.12
April.....	650	90	228	1.17	1.30
May.....	300	65	122	.626	.72
June.....	200	42	65.4	.335	.37
July.....	70	32	39.6	.203	.23
August.....	60	22	29.4	.151	.17
September.....	150	24	41.8	.214	.24

CANASERAGA CREEK' AT SHAKERS CROSSING

Location.—At highway bridge at Shakers Crossing, about 1 mile above mouth and 1¼ miles northeast of Mount Morris, Livingston county.

Drainage area.—347 square miles. (Measured by engineers of the New York State Conservation Commission.)

Records available.—Current meter measurements 1904–1915; continuous record of gage height and occasional current meter measurements July 13, 1915, to September 30, 1918.

Gage.—Gurley seven-day water-stage recorder on the left bank, just below the bridge. Datum of gage same as that established on Genesee river at Jones bridge near Mount Morris, July 12, 1916 (540.00 feet Conservation Commission datum). Recorder inspected by Mrs. Wm. Russell.

Discharge measurements.—Made from the highway bridge during medium and high stages and by wading during low stages.

Channel and control.—Firm gravel; not likely to shift; subject to back-water from Genesee river.

Ice.—Stage-discharge relation affected by ice.

Extremes of stage.—Maximum stage during year from water-stage recorder, 27.9 feet at 4 A. M.; February 21; minimum stage from water-stage recorder, 7.86 feet at 6 P. M., August 31.

1915–1918: Maximum stage from water-stage recorder, 28.92 feet at 1 P. M., May 17, 1916; minimum stage from water-stage recorder, 7.86 feet at 6 P. M., August 31, 1918.

Accuracy.—Stage-discharge relation is affected by the stage in the Genesee river to such an extent that discharge computations have not been made.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Canaseraga Creek at Shakers Crossing, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Nov. 1.....	E. D. Burchard.....	15.44	1,910
1.....	J. W. Moulton.....	14.74	1,623
2.....	do.....	12.62	980
Feb. 13 a.....	E. D. Burchard.....	24.97	—1,640
14.....	do.....	24.75	1,650
Mar. 16.....	do.....	22.82	5,620
May 23.....	do.....	9.79	421
July 15.....	do.....	8.70	157

a Measurement shows flow up-stream due to back water flow into creek from Genesee river caused by ice jam near Jones bridge.

Daily gage height, in feet, of Genesee River at Shaker Crossing, for the year ending September 30 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	8.63	14.90	9.98	9.48	.....	20.15	9.71	9.36	9.10	8.63	8.22	8.29
2.....	8.65	12.32	.....	9.46	.....	22.61	8.77	9.33	8.94	8.61	8.18	8.29
3.....	8.68	11.26	.....	9.52	.....	21.15	9.75	9.26	8.85	8.54	8.16	8.23
4.....	8.96	10.71	.....	9.42	.....	17.98	9.66	9.24	8.75	8.40	8.00	8.26
5.....	9.31	10.29	.....	9.42	.....	16.48	9.53	9.20	8.75	8.52	8.20	8.18
6.....	9.17	10.11	.....	9.31	9.29	18.95	9.40	9.18	8.75	8.41	8.32	8.35
7.....	8.98	10.01	.....	9.41	9.35	18.16	9.31	9.13	8.79	8.42	8.26	8.36
8.....	8.95	9.88	.....	9.40	9.39	14.30	9.32	9.77	8.74	8.46	8.20	8.49
9.....	9.14	9.74	9.48	9.35	9.50	11.64	9.67	9.42	8.65	8.37	8.36	8.48
10.....	9.02	9.56	8.88	9.48	9.83	16.28	9.51	9.63	8.69	8.59	8.36	8.45
11.....	8.90	9.42	9.72	9.74	10.81	18.39	.....	10.10	8.70	8.61	8.39	8.45
12.....	8.93	9.52	9.78	9.52	15.94	18.36	.....	9.68	9.49	8.54	8.41	8.37
13.....	9.39	9.46	9.85	9.51	20.97	19.90	9.70	9.68	9.38	8.50	8.50	8.25
14.....	9.25	9.42	9.89	9.52	24.19	24.02	11.94	9.82	9.01	8.49	8.46	8.49
15.....	9.16	9.42	9.88	9.55	24.53	26.68	15.01	9.53	8.90	8.49	8.41	8.61
16.....	9.66	9.58	9.72	9.56	24.03	22.14	12.99	9.33	8.76	8.37	8.40	8.51
17.....	9.32	9.70	9.68	9.70	20.97	16.76	11.78	9.22	8.79	8.32	8.44	8.95
18.....	9.03	9.45	9.68	9.82	17.65	13.47	14.04	9.08	8.74	8.27	8.42	9.02
19.....	9.96	9.58	9.62	9.60	15.81	11.96	12.35	9.02	8.70	8.21	8.41	8.56
20.....	17.43	9.55	9.62	9.53	25.23	12.20	10.89	9.17	8.63	8.16	8.30	8.96
21.....	13.01	9.62	10.02	9.58	26.88	12.19	10.38	9.90	8.62	8.16	8.20	9.95
22.....	10.45	9.56	10.45	9.55	23.56	12.02	10.70	9.47	8.98	8.05	8.15	8.64
23.....	9.79	9.52	9.90	9.50	21.94	11.45	10.50	9.70	9.09	8.07	8.14	8.75
24.....	13.20	9.50	10.17	9.47	17.59	.....	10.14	9.57	8.97	8.05	8.16	8.91
25.....	20.48	9.42	10.94	9.49	16.75	.....	9.92	9.20	8.80	8.53	8.20	8.71
26.....	18.38	9.46	10.87	9.51	23.40	10.08	9.68	10.53	8.72	8.22	8.22	8.70
27.....	19.96	9.49	10.10	9.55	23.90	9.86	9.49	10.79	8.64	8.16	8.15	8.74
28.....	22.26	9.52	9.80	9.50	21.54	9.82	9.32	9.78	8.64	8.14	8.09	8.78
29.....	21.12	9.65	9.50	9.58	.....	9.84	9.20	9.38	8.63	8.20	8.07	8.70
30.....	22.69	9.72	9.32	9.58	.....	9.74	9.28	9.50	8.64	8.17	8.15	8.66
31.....	20.01	.....	9.48	.....	.....	9.72	.....	9.31	.....	8.20	8.09	.....

NOTE.—Gage height October 20–21 estimated by comparison with records on Genesee River at Jones Bridge. Gage height November 10 to December 18, and December 29, to January 16, determined by observations on staff gage.

KESHEQUA CREEK AT CRAIG COLONY, SONYEA

Location.—About 200 feet down-stream from private highway bridge, on grounds of Craig Colony at Sonyea, Livingston county.

Drainage area.—69 square miles. (Measured by the State Conservation Commission.)

Records available.—October 31, 1917, to September 30, 1918. Records were obtained from July 22, 1910, to December 31, 1912, at a site about 200 feet up-stream, and from August 29, 1915, to October 31, 1917, at a station about 1 mile down-stream near the D., L. & W. Railroad bridge.

Gages.—Vertical staff gage in three sections on retaining wall on left bank just above control graduated from 0 to 10.1 installed October 27, 1917. Read by A. J. Porter.

Discharge measurements.—Low-water measurements made by wading above the gage. High-water measurements made from down-stream side of bridge.

Control.—Double-crested concrete weir built by Craig Colony for maintaining water level for their pumping plant; permanent.

Extremes of discharge.—Maximum stage recorded during period of record at present station, 5.9 feet at 6:30 A. M., March 14; discharge, about 3,700 second-feet; minimum stage recorded, 0.13 foot at 8 A. M., August 20; discharge, 0.7 second-foot.

Ice.—Stage-discharge relation slightly affected by ice.

Accuracy.—Stage-discharge relation permanent. Slightly affected by ice during a large part of the period from December to February. Rating curve well defined from 0 to 450 second-feet. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Results, good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the State Conservation Commission.

Discharge measurements of Keshequa Creek at Craig Colony, Sonyea, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 26.....	E. D. Burchard.....	1.60	245
31.....	do.....	1.33	151
Nov. 3.....	do.....	1.00	68
Dec. 20a.....	do.....	.87	22
Jan. 17b.....	do.....	.66	11
Feb. 12a.....	do.....	3.15	1,450
15.....	do.....	1.70	210
Mar. 16.....	do.....	1.30	156
May 24.....	J. W. Moulton.....	.64	21
June 23.....	E. D. Burchard.....	.52	14
July 15.....	do.....	.30	3.42
Aug. 21.....	do.....	.19	1.29

a Measurement made through partial ice cover.

b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Keshequa Creek at Craig Colony, Sonyea, for the year ending September 30, 1918

DAY	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	105	75	8	6	56	37	26	20	7.0	5.6	1.8
2.....	83	54	8	6	197	47	25	17	7.5	3.8	2.6
3.....	66	38	7	5	75	40	23	14	9.3	3.2	3.0
4.....	56	36	6	5	368	38	20	12	5.6	2.6	2.2
5.....	50	34	6	5	115	31	20	12	4.8	4.1	3.0
6.....	47	33	6	5	368	26	18	14	5.6	6.3	6.3
7.....	44	33	6	6	77	26	17	17	3.8	5.2	3.0
8.....	36	15	8	6	61	26	79	12	4.1	2.3	2.2
9.....	34	26	9	10	75	40	33	11	3.8	15	3.0
10.....	33	40	12	28	620	28	90	13	6.3	7.5	2.5
11.....	31	60	11	190	95	26	81	29	7.5	6.3	2.0
12.....	31	55	15	900	395	32	48	45	4.8	2.4	1.4
13.....	28	48	36	455	395	34	65	20	3.4	7.0	3.0
14.....	26	26	36	154	1,590	226	70	14	4.1	3.0	4.8
15.....	26	17	17	595	226	190	38	11	3.4	2.0	3.8
16.....	29	14	12	61	245	110	29	8.8	4.5	2.2	3.4
17.....	28	18	11	50	75	72	23	9.8	4.1	1.6	14
18.....	25	22	11	35	72	245	19	7.5	4.8	3.0	9.3
19.....	17	20	10	245	79	102	18	7.0	3.0	2.0	13
20.....	22	24	9	545	105	68	45	7.0	2.4	.8	21
21.....	23	110	9	35	112	60	44	7.9	2.2	1.3	15
22.....	28	90	9	29	112	128	23	28	2.6	1.4	5.2
23.....	28	32	8	33	75	72	40	12	2.6	1.4	6.3
24.....	22	46	8	43	51	61	23	12	3.0	1.1	4.8
25.....	21	110	8	68	51	50	21	7.9	15	1.0	7.5
26.....	24	26	8	425	47	41	207	7.5	5.9	.9	7.0
27.....	22	26	8	66	35	36	118	7.0	3.4	1.0	8.8
28.....	32	24	8	68	38	31	44	8.8	1.8	1.4	7.0
29.....	30	14	8	.....	40	26	29	5.6	9.3	1.2	6.3
30.....	51	11	8	.....	37	26	48	4.1	9.8	1.0	5.6
31.....	.....	10	6	.....	40	.....	31	.....	9.8	2.4	.....

NOTE.—Discharge December 10 to February 12, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for nearby streams.

Monthly discharge of Keshequa Creek at Craig Colony, Sonyea, for the year ending September 30, 1918

[Drainage area, 69 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
November.....	105	17	36.6	.534	.60
December.....	110	10	38.3	.555	.64
January.....	36	6	10.7	.155	.16
February.....	900	5	146	2.12	2.21
March.....	1,590	35	191	2.77	3.19
April.....	245	26	65.8	.954	1.06
May.....	207	17	45.6	.661	.76
June.....	45	4.1	13.4	.194	.22
July.....	15	1.8	5.32	.077	.09
August.....	15	0.8	3.23	.047	.05
September.....	21	1.4	5.96	.086	.10
The year.....	1,590	0.8	50.5	.732	9.08

OWASCO OUTLET NEAR AUBURN

Location.—On the farm of Charles H. Pearce, 2 miles below the center of the city of Auburn, Cayuga county, and 3¾ miles below the State dam at the outlet of Owasco lake.

Drainage area.—206 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—November 17, 1912, to September 30, 1918.

Gage.—Gurley water-stage recorder in a concrete shelter on the left bank on the farm of Charles H. Pearce. Recorder inspected by Charles H. Pearce.

Discharge measurements.—Made by wading directly opposite the gage in low water and from a cable at the same section in high water.

Channel and control.—A low concrete control has been constructed about 15 feet below the gage. Crest of control is 1 foot wide and the slopes of both upstream and downstream faces are ½: 1. A small horizontal apron built on a level with the bed of the stream extends downstream 2½ feet from toe of dam. Mean elevation of the left end of the dam for a distance of 50 feet is at a gage height 1.29 feet; the remaining 50 feet of the crest of the dam is at a gage height 2.13 feet.

Extremes of discharge.—Maximum stage during year from water-stage recorder, 3.5 at 3 A. M., March 17; (discharge, 1,100 second-feet); minimum stage; 1.48 feet at 10 P. M., October 7; (discharge, 12 second-feet).

1912-1918: Maximum stage, 6.4 feet during period March 25 to 30, 1913, determined by leveling from flood marks; (discharge, 2,750 second-feet); minimum stage from water-stage recorder, 1.41 feet at 1 A. M., October 15, 1915; (discharge, 5.6 second-feet).

Ice.—Stage-discharge relation seldom affected by ice.

Diversions.—An average flow of about 10 second-feet is pumped from Owasco lake for the municipal water supply of the city of Auburn. Proportion returning to stream above the gaging station is not known.

Regulation.—Large diurnal fluctuation in flow during low water periods due to mills in the city of Auburn; seasonal flow regulated at the State dam.

Accuracy.—Stage-discharge relation permanent; not affected by ice during year. Rating curve well defined between 1 and 1,700 second-feet. Operation of the water-stage recorder satisfactory throughout year, except during periods when it is not in operation. Daily discharges ascertained by averaging the hourly discharge.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Owasco Outlet near Auburn, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
July 11.....	E. D. Burchard.....	Foot 2.43	Sec.-ft. 254

Daily discharge, in second-feet, of Owasco Outlet near Auburn, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	181	534	271	.....	a175	434	484	439	414	.....	194	134
2.....	184	509	267	.....	a170	420	471	407	393	.....	205	149
3.....	176	522	261	.....	125	353	468	394	401	.....	195	157
4.....	181	525	274	.....	154	317	458	389	402	.....	166	156
5.....	188	507	263	.....	167	340	422	332	369	.....	191	139
6.....	158	499	267	.....	174	352	434	284	337	.....	205	147
7.....	48	474	261	.....	139	427	361	298	332	.....	204	141
8.....	155	458	256	.....	139	506	237	284	286	.....	209	132
9.....	209	a455	254	.....	130	526	239	269	205	.....	196	149
10.....	212	a445	245	.....	114	558	202	214	190	.....	a190	150
11.....	212	a435	251	145	135	795	301	265	181	188	a185	146
12.....	273	a425	263	172	160	937	335	265	192	166	a180	155
13.....	213	a420	250	124	157	923	336	276	171	168	a180	177
14.....	205	a412	196	203	156	921	429	203	179	160	a180	183
15.....	219	a404	249	150	169	931	524	203	161	168	176	96
16.....	211	a395	244	163	160	946	539	267	160	171	194	137
17.....	211	388	a225	156	162	921	560	203	184	162	168	161
18.....	211	330	a220	161	181	876	596	205	147	161	185	167
19.....	244	322	214	158	184	784	643	196	171	a165	175	159
20.....	206	324	205	195	199	748	640	194	175	171	177	188
21.....	64	313	205	193	175	718	612	174	242	181	175	169
22.....	232	303	194	176	189	689	622	194	315	191	183	77
23.....	359	309	202	171	170	591	628	348	258	178	179	124
24.....	376	298	202	178	173	a578	626	396	235	184	163	80
25.....	428	296	193	153	214	a580	580	390	226	a185	174	137
26.....	457	285	202	181	262	a570	522	373	.....	a190	a175	134
27.....	468	289	202	175	304	a560	495	398	.....	a190	173	126
28.....	452	287	149	152	351	a550	526	402	.....	a190	167	116
29.....	492	278	202	140	.....	a530	516	407	.....	a190	167	92
30.....	537	264	a202	146	.....	515	480	462	.....	a195	162	128
31.....	545	.....	a200	131	.....	504	.....	414	.....	a195	172	.....

NOTE.—Mean discharge January 1-10, estimated 198 second-feet. Mean discharge June 26-30, estimated 216 second-feet. Mean discharge July 1-10, estimated 206 second-feet.
a Estimated.

Monthly discharge of Owasco Outlet near Auburn, for the year ending September 30, 1918
 [Drainage area, 206 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	545	48	268	1.30	1.50
November.....	534	264	390	1.89	2.11
December.....	274	149	220	1.11	1.28
January.....	203	124	174	.845	.97
February.....	351	114	178	.864	.90
March.....	946	317	626	3.04	3.51
April.....	643	202	476	2.31	2.58
May.....	439	174	306	1.49	1.72
June.....	414	147	247	1.20	1.34
July.....	.....	160	187	.908	1.06
August.....	209	162	182	.883	1.02
September.....	188	77	142	.689	.77
The year.....	946	48	284	1.38	18.75

WEST BRANCH OF ONONDAGA CREEK AT SOUTH ONONDAGA

Location.—At the highway bridge in the village of South Onondaga, Onondaga county, about $1\frac{3}{4}$ miles above the mouth of the creek and about 10 miles above the city of Syracuse.

Drainage area.—21.8 square miles. Measured on U. S. G. S. topographic maps.

Records available.—August 22, 1916, to June 30, 1918, when the station was discontinued.

Gage.—Staff on downstream side of right abutment of bridge.

Discharge measurements.—Made from bridge or by wading.

Channel and control.—Fine and coarse gravel; probably shifting.

Extremes of stage.—Maximum stage recorded, 3.34 at 7.20 A. M., February 20; minimum stage recorded, 1 foot at 7.15 A. M., October 3.

1916-1918: Maximum stage recorded, 3.34 feet at 7.20 A. M., February 20, 1918; minimum stage recorded, 0.90 foot at 6.45 P. M., September 24, and 6.35 A. M., September 25, 1917.

Ice.—Stage-discharge relation probably affected by ice. Sufficient data have not been obtained for determination of discharge.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of West Branch of Onondaga Creek at South Onondaga, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
April 5.....	E. D. Burchard.....	Feet 1.76	Sec.-ft. 19

Daily gage height, in feet, of West Branch of Onondaga Creek at South Onondaga, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Feb.	Mar.	April	May	June
1.....	1.18	1.62	1.60	.....	1.84	1.88	1.73	1.37
2.....	1.70	1.52	1.47	.....	1.86	1.89	1.67	1.33
3.....	1.40	1.45	1.38	.....	1.88	1.86	1.61	1.30
4.....	1.48	1.39	1.35	.....	1.79	1.80	1.65	1.31
5.....	1.41	1.37	1.34	.....	2.11	1.79	1.59	1.31
6.....	1.38	1.33	1.27	.....	2.63	1.75	1.58	1.38
7.....	1.14	1.36	1.36	.....	2.06	1.74	1.55	1.69
8.....	1.59	1.28	1.16	.....	1.95	1.81	1.53	1.41
9.....	1.29	1.28	1.22	.....	1.83	2.45	1.52	1.34
10.....	1.15	1.27	.....	.....	2.53	1.93	1.59	1.44
11.....	1.11	1.27	.....	.....	2.11	1.96	1.60	1.34
12.....	1.16	1.27	.....	2.34	2.24	1.95	1.57	1.86
13.....	1.20	1.24	.....	2.49	2.43	2.39	1.79	1.65
14.....	1.13	1.18	.....	2.26	3.03	2.15	1.78	1.51
15.....	1.24	1.19	.....	3.47	2.75	1.93	1.58	1.44
16.....	1.15	1.25	.....	2.72	2.46	1.85	1.51	1.35
17.....	1.09	1.26	.....	.....	2.49	1.84	1.47	1.33
18.....	1.60	1.21	.....	.....	2.21	2.34	1.43	1.32
19.....	1.68	1.27	.....	2.04	2.19	2.04	1.40	1.29
20.....	1.82	1.30	.....	3.15	2.21	1.89	1.57	1.28
21.....	1.31	1.26	.....	2.17	2.22	1.92	1.78	1.28
22.....	1.24	1.39	.....	2.41	2.17	2.60	1.54	1.51
23.....	1.25	1.38	.....	2.06	2.27	1.96	1.61	1.67
24.....	1.50	1.30	.....	1.76	1.97	1.93	1.45	1.45
25.....	2.17	1.20	.....	2.01	1.97	1.83	1.45	1.37
26.....	1.77	1.24	.....	3.14	1.94	1.78	1.54	1.33
27.....	1.51	1.20	.....	2.35	1.92	1.73	1.50	1.28
28.....	1.65	1.23	.....	2.05	1.85	1.69	1.45	1.29
29.....	1.59	1.24	.....	.....	1.89	1.63	1.46	1.49
30.....	1.96	1.32	.....	.....	1.88	1.64	1.44	1.80
31.....	1.79	.....	.....	.....	1.88	.....	1.39	.....

BLACK RIVER NEAR BOONVILLE

Location.—At highway bridge about 1 mile above the mouth of Sugar river, about 2 miles northeast of Boonville, Oneida county, and 2 miles, by river, downstream from Hawkinsville.

Drainage area.—303 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—February 16, 1911, to June 30, 1918.

Gage.—Chain, near center of left span, downstream side of bridge. Staff gage (graduated from 6.0 to 13.0 feet) on downstream side of right abutment, used for high water readings; read by W. D. Charbonneau.

Discharge measurements.—Made from a cable about ½ mile above gage at high stages and by wading near the cable at low stages.

Channel and control.—Rough and full of boulders; permanent.

Extremes of discharge.—Maximum stage recorded during year, 9.6 feet at 5 P. M., October 31; (discharge, 4,960 second-feet); minimum stage recorded, 2.40 feet at 5 P. M., August 26; (discharge, about 5 second-feet).

1911-1918: Maximum stage, about 12.5 feet during night of March 28, 1913 (determined by leveling from flood marks, (discharge about 10,000 second feet). Minimum stage recorded, 2.40 feet at 5 P. M., August 26; (discharge, about 5 second-feet).

Ice.—Stage-discharge relation affected by ice.

Regulation and diversion.—The State dam at Forestport, about 8 miles upstream, provides a reservoir with a capacity of about 2,000,000,000 cubic feet. Water is diverted from this reservoir during the navigation season through the Forestport feeder flowing west to a basin in Boonville. The Black River canal flows north from this basin, entering the Black river at the foot of Lyons Falls. A spillway from the basin overflows into Mill creek, a tributary to Black river. Water flowing through these two latter channels returns to the river below the gaging station, thus passing around it. The Black River canal also flows south from Boonville, passing out of the Black river drainage and entering the summit level of the Erie canal (or Barge canal) at Rome.

Occasional discharge measurements have been made at three points to indicate the distribution of the diverted water. The water entering Boonville through the Forestport feeder has been measured at the highway bridge about 1 mile northeast of Boonville. During October, 1915, two water-stage recorders were installed on this canal to obtain a continuous record of the flow. This is published as a separate station, "Forestport Feeder near Boonville." The water flowing north from the basin through the Black River canal has been measured at the highway bridge just below the lock into this canal near the railroad station. The water flowing south from the basin has been measured at a private farm bridge about 1 mile southeast of Boonville. During September, 1915, two water-stage recorders were installed on this canal to obtain a continuous record of the flow. This is published as a separate station, "Black River Canal, flowing south, near Boonville."

Accuracy.—Stage-discharge relation practically permanent. Affected by ice during a large portion of the period December to March, inclusive. Rating curve well defined between 35 and 2,800 second-feet and fairly well defined between 2,800 and 4,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good, except for periods when the stage discharge relation was affected by ice when they were fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Black River near Boonville, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 19 ^b	J. W. Moulton.....	5.67	318
Jan. 11 ^b	E. D. Burchard.....	4.69	170
Feb. 9 ^a	J. W. Moulton.....	4.85	173
Mar. 14 ^b	do.....	7.08	586
Mar. 19 ^b	do.....	6.85	574
April 13.....	E. D. Burchard.....	6.70	1,400
June 6.....	M. H. Carson.....	3.65	92

^a Measurement made through complete ice cover.

^b Measurement made through partial ice cover.

Daily discharge, in second-feet, of Black River near Boonville, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	90	4,140	680	220	120	1,200	2,500	1,290	145	194	28	119
2.....	78	1,940	630	220	110	850	2,380	1,210	154	250	42	90
3.....	127	1,370	558	220	120	800	2,500	1,140	136	216	46	66
4.....	250	1,210	450	220	120	850	2,380	1,210	111	205	49	72
5.....	305	1,060	335	200	100	900	2,160	1,210	97	154	49	90
6.....	490	920	227	190	90	800	2,160	1,060	97	63	44	70
7.....	735	795	227	190	130	650	2,160	920	430	66	36	174
8.....	680	855	238	190	160	550	2,270	855	920	154	24	227
9.....	605	680	250	180	180	600	2,270	795	630	558	28	194
10.....	580	535	260	170	200	700	2,620	735	305	855	56	184
11.....	580	335	280	220	240	600	2,380	795	194	795	84	227
12.....	558	275	300	440	300	500	1,740	795	164	535	70	275
13.....	795	250	300	280	460	480	1,460	1,060	154	174	56	305
14.....	1,140	194	320	300	480	600	1,740	1,540	97	145	61	410
15.....	1,140	512	320	340	550	600	1,940	1,370	90	535	46	535
16.....	1,140	1,540	320	280	550	850	2,050	1,210	63	430	44	450
17.....	1,060	1,540	320	240	460	1,200	1,940	855	56	262	49	410
18.....	855	1,210	320	200	440	1,200	1,740	920	40	205	59	680
19.....	795	1,140	320	190	550	1,000	1,540	795	36	154	70	795
20.....	795	855	320	200	650	800	1,840	680	38	127	59	990
21.....	795	735	300	180	900	1,600	1,940	735	35	104	46	1,140
22.....	795	735	280	200	1,100	2,400	1,740	855	205	111	33	855
23.....	735	630	280	200	1,100	2,400	1,540	795	470	63	27	795
24.....	795	512	260	180	1,200	2,200	1,540	680	370	66	21	795
25.....	795	450	260	150	1,200	2,160	1,370	680	290	49	11	735
26.....	795	430	240	140	1,400	2,050	1,370	680	262	30	7	795
27.....	855	450	220	140	1,700	2,160	1,210	795	227	40	10	795
28.....	920	450	220	120	1,900	2,380	990	1,060	164	44	26	735
29.....	1,940	512	220	95	.....	2,270	1,060	855	84	49	53	680
30.....	3,750	535	220	100	.....	2,160	1,210	680	275	30	70	605
31.....	4,820	.....	200	110	.....	2,380	.....	227	.....	36	84	.....

NOTE.— Discharge December 10 to March 24, estimated because of ice from discharge measurements, weather records and study of gage height graph.

Monthly discharge of Black River near Boonville, for the year ending September 30, 1918
[Drainage area, 303 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	4,820	78	961	3.17	3.66
November.....	4,140	194	893	2.94	3.28
December.....	680	200	312	1.03	1.19
January.....	440	95	203	.670	.77
February.....	1,900	90	590	1.95	2.03
March.....	2,400	480	1,290	4.26	4.91
April.....	2,620	990	1,860	6.14	6.85
May.....	1,545	227	919	3.03	3.47
June.....	920	35	211	.696	.78
July.....	855	30	216	.713	.82
August.....	84	7	44.8	.148	.17
September.....	1,140	66	476	1.57	1.75
The year.....	4,820	7	663	2.19	29.68

BLACK RIVER AT BLACK RIVER

Location.—About ¼ mile below the concrete arch highway bridge and the power plant of the Northern New York Utilities Company and about ¾ mile below the village of Black River, Jefferson county.

Drainage area.—1,970 square miles (measured on U. S. G. S. topographic maps).

Records available.—March 24, 1917, to September 30, 1918.

Gage.—Vertical staff, in two sections, spiked to large cedar tree on the left bank about ¼ mile below the highway bridge; read by Erwin W. Hart.

Discharge measurements.—Made from a cable about 100 yards above the gage.

Channel and control.—Solid rock.

Extremes of discharge.—Maximum stage recorded, 12.3 at 8:40 A. M., April 4; (discharge, 16,300 second-feet); minimum stage recorded, 2.8 at 7:45 P. M., September 1; (discharge, 450 second-feet).

1917-1918: Maximum stage recorded, 13.4 feet from 6 P. M., April 4, to 7 A. M., April 5, 1917; (discharge, 19,300 second-feet); minimum stage recorded, 1.05 feet at 2:45 P. M., Sunday, June 29, 1917, during a current-meter measurement; (discharge, about 16 second-feet).

Ice.—Stage-discharge relation affected by ice.

Regulation.—Seasonal distribution of flow is regulated by Beaver river flow, Fulton Chain lakes, Forestport reservoir and other storage reservoirs in the upper portion of the drainage basin. Some diurnal fluctuation at low stages due to mills and power plants above the station.

Diversions.—Water is diverted from Black river into the Forestport feeder at Forestport. A portion of this water returns to the river through various spillways and through the Black River canal flowing north. The remainder passes out of the drainage basin through the Black River canal flowing south,—the record at the station on Black River canal flowing south at Boonville indicates the amount of this diversion. See also "Regulation and Diversion" in station description for Black river near Boonville.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined between 500 and 18,000 second-feet. Gage read to tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for days of low discharge, when they may be poor.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Black River at Black River, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 14a.....	E. D. Burchard.....	5.78	1,340
Feb. 18a.....	J. W. Moulton.....	5.28	1,370
Mar. 14.....	do.....	6.20	3,760
Mar. 18.....	do.....	6.20	3,930
April 6.....	E. D. Burchard.....	11.32	14,300

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of Black River at Black River, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1,570	10,400	2,360	1,400	1,800	7,420	12,600	5,840	2,730	1,470	1,100	680
2.....	2,010	12,600	2,240	2,400	1,700	7,240	13,100	6,520	2,600	1,680	1,100	745
3.....	2,010	11,100	2,480	2,200	1,200	6,700	14,600	7,060	2,730	3,390	1,100	620
4.....	2,010	9,570	2,360	1,800	1,400	6,010	16,000	6,880	1,900	3,250	1,100	950
5.....	2,480	8,370	2,240	2,400	1,600	5,510	15,300	6,350	1,900	2,120	1,020	1,270
6.....	2,990	6,520	1,900	1,700	1,200	4,870	13,800	5,840	1,570	1,900	950	950
7.....	3,120	5,030	1,790	1,200	1,200	4,550	13,100	4,870	2,360	2,120	1,100	810
8.....	3,250	4,550	1,500	1,400	1,500	4,100	10,800	5,840	4,710	1,680	845	712
9.....	2,860	3,950	1,300	2,000	950	3,670	10,400	6,180	5,670	2,240	1,100	1,020
10.....	2,990	3,670	1,500	2,200	750	3,530	10,800	6,180	4,710	3,390	950	1,100
11.....	2,600	3,530	1,700	1,700	1,100	3,120	11,100	7,240	3,950	2,120	1,900	950
12.....	2,360	3,390	2,600	850	1,400	2,990	11,100	7,240	4,870	1,680	1,370	1,100
13.....	3,120	3,120	2,400	850	1,700	3,250	9,990	7,610	5,510	1,900	950	1,100
14.....	4,550	2,860	2,000	1,500	2,200	3,950	9,570	7,610	5,840	2,360	1,100	1,790
15.....	5,190	2,600	2,000	1,300	3,400	4,100	9,170	7,610	5,350	3,120	950	810
16.....	5,510	2,360	1,600	1,400	3,600	3,950	8,570	8,370	4,870	3,670	880	650
17.....	4,870	2,730	2,200	1,800	4,200	3,670	8,770	7,610	4,250	2,990	1,180	560
18.....	4,400	2,600	2,200	1,300	4,400	3,810	8,570	6,700	2,730	2,480	1,570	1,470
19.....	3,670	2,860	2,000	650	4,600	4,550	9,370	5,840	2,360	2,600	1,370	3,120
20.....	6,180	3,120	1,500	440	6,500	6,010	9,780	4,870	2,360	2,480	950	3,390
21.....	7,240	2,990	1,300	1,200	6,880	8,180	9,780	3,810	2,240	1,900	1,470	4,250
22.....	6,520	3,250	1,200	850	6,880	9,570	9,570	4,870	2,120	1,790	1,100	4,710
23.....	5,840	3,250	1,000	1,700	5,840	10,800	9,780	5,030	1,790	1,680	1,370	4,400
24.....	4,710	3,390	1,000	1,700	5,510	11,100	9,990	5,030	1,900	1,370	1,680	4,870
25.....	5,840	2,600	1,300	1,400	5,190	11,100	9,570	4,400	2,240	1,370	1,270	3,670
26.....	6,180	2,360	2,200	1,700	7,240	10,800	8,770	3,670	2,120	1,470	1,180	2,730
27.....	6,180	2,360	1,800	750	7,420	10,600	7,800	4,550	1,900	1,270	880	2,490
28.....	5,840	1,900	1,800	480	7,990	9,570	6,180	4,870	1,680	810	1,100	3,120
29.....	5,840	2,010	2,000	850	.....	8,770	5,840	4,710	1,900	1,100	1,100	3,530
30.....	6,880	2,010	1,600	1,000	.....	8,770	5,510	4,250	1,680	1,270	1,370	3,390
31.....	9,170	.....	2,200	1,500	.....	9,990	.....	4,250	.....	1,020	950	.....

NOTE.— Discharge December 7 to February 19, estimated because of ice from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Black River near Boonville.

Monthly discharge of Black River at Black River, for the year ending September 30, 1918
[Drainage area, 1,870 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	9,170	1,570	4,450	2.38	2.74
November.....	12,600	1,900	4,370	2.34	2.61
December.....	2,600	1,000	1,850	.989	1.14
January.....	2,400	440	1,410	.754	.87
February.....	7,990	750	3,550	1.90	1.98
March.....	11,100	2,990	6,520	3.49	4.02
April.....	16,000	5,510	10,300	5.51	6.15
May.....	8,370	3,670	5,860	3.13	3.61
June.....	5,840	1,570	3,060	1.65	1.84
July.....	3,670	810	2,050	1.10	1.27
August.....	1,900	845	1,160	.620	.71
September.....	4,870	560	2,030	1.09	1.22
The year.....	16,000	440	3,880	2.07	23.16

FORESTPORT FEEDER NEAR BOONVILLE

Location.— Slope station at the lower end of feeder, above the point where it enters the basin at Boonville. A spillway takes water from the feeder just below gage No. 2, discharging into Mill creek and entering Black river below the Boonville gaging station. Other spillways above Hawkinsville discharge into Black river above the gaging station. There are no spillways between gage No. 1 and gage No. 2. The sum of this record and the record for the Black river near Boonville indicates the total run-off of the Black river basin.

Records available.— Occasional current-meter measurements, 1900 and 1905 to 1915. Continuous record October 30, 1915, to September 30, 1918.

Gages.— Two Gurley seven-day water-stage recorders with natural scale for gage heights. The float wells are $1\frac{1}{2}$ by 2 feet, inside dimensions, the bottoms of which are about $1\frac{1}{2}$ feet below the normal elevation of water surface in the canal. They are about 2.53 miles apart.

Gage No. 1 is located at the downstream end of the left abutment of the steel highway bridge in the village of Hawkinsville; inspected by Mrs. Anna Zwahlen and Charles Nugent.

Gage No. 2 is located on the left bank just below a farm bridge, about 1 mile above the basin at Boonville; inspected by Charles Nugent.

These gages and the two gages in the Black River canal, flowing south, near Boonville, are all set at the same datum.

Discharge measurements.— Made from the steel highway bridge at gage No. 1 in Hawkinsville.

Determination of discharge.— Daily discharge determined by use of Chezy formula. The coefficient is computed from each current-meter measurement and plotted on a curve, showing the variation of "C" through the season. A smooth curve is then drawn through the plotted points and coefficient for each day is taken off. The other factors in Chezy formula are obtained from gage height records.

Regulation.— Flow in the feeder is regulated at the outlet of Forestport reservoir.

Ice.— There is usually no flow in the canal during the winter season. Water was observed in the canal several times during the winter of 1917-1918, and occasional current-meter measurements of the discharge were made. See list of measurements.

Accuracy.— The value of the coefficient in Chezy formula determined from current-meter measurements are consistent. Daily discharge ascertained as indicated in paragraph on determination of discharge. Results good, except for days when the discharge varies widely from the mean, when the results are fair.

Co-operation.— Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Forestport Feeder near Boonville, during the year ending September 30, 1918

DATE	Made by	GAGE HEIGHT		Discharge
		Gage No. 1	Gage No. 2	
		<i>Feet</i>	<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 25.....	O. W. Hartwell.....	3.254	1.934	239
Nov. 13.....	E. D. Burchard.....	3.240	1.877	262
13.....	do.....	3.239	1.876	262
Feb. 9a.....	J. W. Moulton.....	.....	.....	60
Mar. 14a.....	do.....	.....	.....	21
19a.....	do.....	.....	.....	23
April 13.....	M. H. Carson.....	.....	.....	40
June 6.....	do.....	3.222	1.858	281
27.....	J. W. Moulton.....	3.002	1.592	241
27.....	do.....	3.026	1.625	246
July 18.....	do.....	3.122	1.776	237
18.....	do.....	3.124	1.779	243
Aug. 15.....	C. C. Covert.....	3.044	1.724	201
Sept. 7.....	do.....	3.526	2.005	254
20.....	O. W. Hartwell.....	3.627	2.057	291

a Measurement made through complete ice cover.

Daily discharges, in second-feet, of Forestport Feeder near Boonville, for the year ending September 30, 1918

DAY	Oct.	Nov.	June	July	Aug.	Sept.
1.....	266	235	134	246	238	215
2.....	255	227	194	292	221	240
3.....	250	246	238	307	216	239
4.....	246	239	226	255	207	231
5.....	248	271	237	254	212	236
6.....	246	284	259	245	221	239
7.....	238	288	261	240	222	251
8.....	230	300	251	238	224	237
9.....	214	262	228	252	225	200
10.....	257	263	230	265	233	193
11.....	.....	264	224	264	220	206
12.....	.....	261	230	240	219	242
13.....	.....	261	248	226	220	214
14.....	.....	257	259	249	213	209
15.....	.....	.....	248	257	203	238
16.....	.....	.....	238	243	197	247
17.....	.....	.....	236	236	195	243
18.....	.....	.....	235	238	179	240
19.....	.....	.....	255	234	220	219
20.....	261	.....	240	224	217	260
21.....	255	.....	226	215	227	252
22.....	252	.....	212	230	227	246
23.....	235	.....	254	239	229	243
24.....	273	.....	265	226	230	214
25.....	246	.....	256	217	222	206
26.....	230	.....	244	206	218	206
27.....	217	.....	240	223	215	251
28.....	238	.....	240	198	209	240
29.....	238	.....	228	205	221	213
30.....	258	.....	212	208	231	196
31.....	250	.....	.....	235	238	.....

Note.— Mean discharge October 11 to 19 estimated 240 second-feet. Mean discharge November 14 to 20 estimated 250 second-feet.

Monthly discharge of Forestport Feeder, near Boonville, for the year ending September 30, 1918

MONTH	DISCHARGE IN SECOND-FEET		
	Maximum	Minimum	Mean
October.....	273	214	244
November.....	300	227	255
June.....	265	134	235
July.....	307	198	239
August.....	238	179	218
September.....	260	193	228

BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE

Location.— Slope station in summit level of Black River canal near Boonville, Oneida county.

Records available.— Occasional discharge measurements, 1900, 1905 to 1915. Continuous record, September 16, 1915, to September 30, 1918.

Gages.— Gurley seven-day water-stage recorders with natural scale for gage heights, 1.81 miles apart. These gages and two gages in the Forestport feeder near Boonville are all set at the same datum.

Gage No. 1 is located on the right bank (opposite tow path) about 50 feet downstream from the collector's office in Boonville.

Gage No. 2 is located on the right bank (opposite tow path) about 300 yards above lock 70 and 50 yards above the spillway from the canal in Lansing Kill. Recorders inspected by Philip Joynt and Charles Nugent.

Discharge measurements.— Made from the steel and concrete highway bridge in the village of Boonville, a short distance below gage No. 1.

Determination of discharge.— Daily discharge determined by use of Chezy formula. The coefficient is computed from each current meter measurement and plotted on a curve showing the variation of "C" through the season. A smooth curve is then drawn through the plotted points and coefficient for each day is taken off. The other factors in Chezy formula are obtained from gage height records.

Diversions.— There are no diversions between Gage No. 1 and Gage No. 2. This station indicates the amount of water diverted from the Black river drainage into the Mohawk river drainage for canal purposes.

Regulation.— Flow in the canal is regulated by the operation of the spillway and sluice gates at Lock 70 and also by discharge of Forestport feeder into the basin at Boonville.

Ice.— No flow in the canal during the frozen season.

Accuracy.— The variation of the coefficient in Chezy formula, as indicated by discharge measurements, seems consistent. Results good.

Co-operation.— Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Black River Canal flowing south at Boonsville, during the year ending September 30, 1918

DATE	Made by	GAGE HEIGHT		Discharge
		Gage No. 1	Gage No. 2	
		<i>Feet</i>	<i>Feet</i>	<i>Sec. Feet</i>
Oct. 26.....	O. W. Hartwell.....	1.465	1.200	151
Nov. 13.....	E. D. Burchard.....	1.550	1.286	175
13.....	do.....	1.526	1.279	168
13.....	do.....	1.500	1.278	168
14.....	do.....	1.506	1.291	170
14.....	do.....	1.502	1.285	165
June 7.....	M. H. Carson.....	1.415	1.258	146
27.....	J. W. Moulton.....	1.457	1.345	126
27.....	do.....	1.395	1.328	111
27.....	do.....	1.285	1.085	163
July 18.....	do.....	1.462	1.262	156
18.....	do.....	1.456	1.255	153
Aug. 16.....	C. C. Covert.....	1.486	1.196	164
Sept. 20.....	O. W. Hartwell.....	1.62	1.29	168

Daily discharge, in second-feet of Black River Canal flowing south at Boonsville, for the year ending September 30, 1918

DAY	Oct.	Nov.	June	July	Aug.	Sept.
1.....	182	173	100	165	159	167
2.....	184	182	217	177	163	173
3.....	179	175	202	181	153	167
4.....	179	177	205	154	166	159
5.....	173	197	196	155	165	173
6.....	179	199	227	140	150	155
7.....	186	184	182	157	153	160
8.....	179	199	194	153	160	161
9.....	178	192	180	157	169	166
10.....	183	184	179	160	168	156
11.....	194	180	184	168	162	153
12.....	173	180	188	140	158	183
13.....	171	185	184	138	164	166
14.....	.....	181	195	153	157	158
15.....	.....	.....	182	156	157	153
16.....	.....	.....	177	150	155	144
17.....	.....	.....	173	149	158	160
18.....	.....	.....	173	145	143	173
19.....	.....	.....	173	143	162	158
20.....	.....	.....	176	136	162	166
21.....	148	.....	178	133	162	159
22.....	157	.....	159	151	162	154
23.....	166	.....	170	167	169	144
24.....	176	.....	171	162	166	136
25.....	171	.....	165	162	169	143
26.....	170	.....	163	151	161	132
27.....	171	.....	151	165	157	166
28.....	176	.....	161	158	160	165
29.....	186	.....	157	156	164	143
30.....	198	.....	146	149	165	139
31.....	182	.....	.....	152	172	.....

NOTE — Mean discharge October 14 to 20 estimated 175 second-feet. Mean discharge November 15 to 30 estimated 180 second-feet.

Monthly discharge of Black River Canal flowing south at Boonville, for the year ending September 30, 1918

MONTH	DISCHARGE IN SECOND-FEET		
	Maximum	Minimum	Mean
October.....	198	148	176
November.....	199	178	182
June.....	227	100	177
July.....	181	133	154
August.....	172	143	161
September.....	183	132	158

MOOSE RIVER AT MOOSE RIVER

Location.—In the village of Moose River, Lewis county, about 3 miles down-stream from McKeever, 5 miles below the mouth of South Branch of Moose river and nearly 20 miles above the junction of Black and Moose rivers at Lyons Falls.

Drainage area.—370 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—June 5, 1900, to September 30, 1918.

Gage.—Staff in two sections, on the left bank a short distance above the cable; read by H. W. Hoch. The gage datum was lowered 0.17 foot on February 23, 1903, and again 5.00 feet on January 1, 1913.

Discharge measurements.—Made from a cable a short distance below the gage.

Channel and control.—Cobblestones and boulders; fairly permanent. Current smooth, depth comparatively uniform.

Extremes of discharge.—Maximum stage recorded during year, 12.8 feet at 8 A. M., October 31; (discharge, 6,680 second-feet); minimum stage recorded, 5.4 feet at 8 A. M. and 5 P. M., August 9; (discharge, 126 second-feet).

1900–1918: Maximum stage recorded, 16.3 feet during the afternoon of March 27, 1913, determined by leveling from flood marks; (discharge, about 16,500 second-feet); minimum stage recorded, 4.94 feet July 21, 23, 25, 26 and 27, 1913; (discharge, about 42 second-feet).

Ice.—Stage discharge relation affected by ice.

Regulation.—A timber dam at McKeever, 3 miles up-stream, is used for power and for the regulation of flow during log driving. Seasonal flow affected by operation of the State dam at Old Forge. This regulation is indicated by a record from station "Middle Branch of Moose River at Old Forge."

Accuracy.—Stage-discharge relation practically permanent. Affected by ice for a large portion of the period from December to March, inclusive. Rating curve fairly well defined between 100 and 5,500 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results fairly good except for periods when the discharge is low or the stage-discharge relation is affected by ice and results are fair.

Co-operation.— Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission and the State Engineer and Surveyor.

Discharge measurements of Moose River at Moose River, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
Oct. 5.....	E. D. Burchard.....	6.61	488
Dec. 18 ^a	J. W. Moulton.....	6.50	277
Jan. 10 ^b	E. D. Burchard.....	6.70	151
Feb. 8 ^b	J. W. Moulton.....	8.00	284
Mar. 13 ^b	do.....	8.63	568
April 12.....	E. D. Burchard.....	2.08	1,910
12.....	M. H. Carson.....	8.99	1,820

^a Measurement made through partial ice cover.
^b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Moose River at Moose River, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	460	2,660	441	360	170	1,100	800	2,760	625	369	202	540
2.....	369	2,000	441	280	240	950	1,500	2,860	670	1,320	216	500
3.....	274	1,830	404	240	180	650	2,600	2,180	540	810	230	422
4.....	441	1,590	386	300	110	950	2,600	1,910	422	715	230	189
5.....	580	1,320	336	280	200	700	2,400	1,590	369	625	176	352
6.....	810	1,200	352	260	220	600	2,000	1,590	369	404	151	239
7.....	715	1,140	220	260	75	550	1,800	1,520	670	386	151	230
8.....	580	1,020	340	200	280	600	2,200	2,180	1,080	386	151	422
9.....	500	965	380	190	110	550	2,600	2,270	760	422	126	422
10.....	500	965	400	150	170	750	2,400	2,270	860	441	189	239
11.....	460	910	440	220	160	600	2,200	2,180	860	715	230	176
12.....	386	860	400	220	180	600	1,900	1,830	860	760	176	336
13.....	965	860	550	220	200	550	1,500	2,180	1,200	810	202	386
14.....	1,080	760	340	170	360	600	1,200	3,170	1,020	860	164	460
15.....	860	715	360	240	360	550	1,500	2,460	860	810	151	441
16.....	1,260	625	440	260	400	600	1,900	1,910	760	670	259	352
17.....	1,140	670	420	240	380	500	3,060	1,670	670	580	336	860
18.....	860	670	280	360	400	600	3,170	1,260	625	670	320	1,260
19.....	715	670	440	260	340	600	3,060	1,260	500	625	202	1,260
20.....	1,830	670	340	180	550	550	2,560	1,020	404	540	151	1,140
21.....	1,380	540	280	280	700	750	2,360	1,260	404	386	164	1,200
22.....	1,200	500	280	440	1,100	850	2,860	1,140	500	336	189	1,380
23.....	1,080	500	280	240	950	1,200	2,860	1,080	670	289	289	1,140
24.....	965	500	240	100	750	1,200	2,460	810	810	274	274	1,140
25.....	860	500	240	220	850	1,100	2,180	860	580	259	230	1,080
26.....	1,140	460	180	150	850	1,000	1,910	860	580	230	259	1,020
27.....	1,080	500	420	180	1,100	900	1,830	860	369	216	259	1,080
28.....	1,200	441	400	170	1,100	750	1,910	1,080	320	244	259	1,200
29.....	1,590	404	320	360	.....	700	2,090	910	336	230	230	1,140
30.....	2,660	500	300	70	.....	700	2,360	810	176	244	259	910
31.....	5,170	.....	280	65	.....	700	.....	715	.....	274	230	.....

NOTE.— Discharge December 8 to April 16, estimated, because of ice, from discharge measurements, weather records, study of gage height graph and comparison with similar studies for Black River near Boonville.

Monthly discharge of Moose River at Moose River, for the year ending September 30, 1918
[Drainage area, 370 square miles]

	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	5,170	274	1,070	2.89	3.33
November.....	2,660	404	900	2.43	2.71
December.....	550	180	353	.954	1.10
January.....	440	65	231	.624	.72
February.....	1,100	75	446	1.21	1.26
March.....	1,200	500	742	2.01	2.32
April.....	3,170	800	2,190	5.92	6.61
May.....	3,170	715	1,630	4.41	5.08
June.....	1,200	176	629	1.70	1.90
July.....	1,320	216	513	1.39	1.60
August.....	336	126	215	.581	.67
September.....	1,380	176	719	1.94	2.16
The year.....	5,170	65	802	2.17	29.46

MIDDLE BRANCH OF MOOSE RIVER AT OLD FORGE

Location.—About 300 feet below the highway bridge and 400 feet below the State dam at Old Forge, Herkimer county.

Drainage area.—51.5 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—November 9, 1911, to September 30, 1918.

Gage.—Vertical staff on left bank, 300 feet below highway bridge; read by Jacob Edick.

Discharge measurements.—Made by wading near the gage at low and medium stages and from highway bridge at high stages.

Channel and control.—Channel, stone and gravel near the gage. Control is rock ledge about 200 feet below gage, practically permanent.

Extremes of discharge.—Maximum discharge stage recorded during year, 4.0 feet at 8 A. M. and 3:30 P. M., May 13; (discharge, 530 second-feet); minimum stage recorded, 1.00 feet several times in June and August; (discharge, 27 second-feet).

1911-1918: Maximum stage recorded, 6.3 feet (stage-discharge relation affected by back water from Moose river) on March 28, 1913; (discharge computed from records at dam, 760 second-feet). Minimum stage recorded, 1.00 foot several times in June and August, 1918; (discharge, 27 second-feet).

Ice.—Stage-discharge relation not affected by ice.

Regulation.—Flow controlled by dam.

Accuracy.—Stage-discharge relation practically permanent between dates of shift. Not affected by ice. Rating curve well defined from 20 to 400 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to the rating table mean daily gage heights weighted on days of changing gates, from records of gate opening at dam. Results good excepting for periods when they are computed from gate openings at the dam and are fair.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Middle Branch of Moose River at Old Forge, during the year ending September 30, 1918

DATE		Made by	Gage height	Dis-charge
			Feet	Sec.-ft.
Oct.	4.....	E. D. Burchard.....	1.81	97
	4.....	do.....	2.20	149
	5.....	do.....	2.42	182
	5.....	do.....	1.39	36
	5.....	do.....	1.32	36
April	11.....	M. H. Carson.....	2.40	137
	11.....	E. D. Burchard.....	1.86	35
May	11.....	do.....	3.39	382
	11.....	do.....	3.79	493
	11.....	J. W. Moulton.....	3.68	451
	11.....	do.....	2.58	177
June	24.....	do.....	1.20	28
	24.....	do.....	1.77	83
	24.....	do.....	2.33	163
July	16.....	do.....	2.76	212

Daily discharge, in second-feet, of Middle Branch of Moose River at Old Forge, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	98	280	49	58	143	130	130	232	63	34	34	104
2.....	98	311	51	56	136	130	136	232	53	25	34	104
3.....	98	290	52	58	136	130	106	232	35	31	28	104
4.....	98	290	52	57	136	130	115	232	27	32	27	104
5.....	98	290	52	57	136	130	115	232	38	33	27	104
6.....	98	280	54	57	136	130	125	223	126	34	27	104
7.....	98	280	57	57	136	130	115	214	36	40	28	104
8.....	98	280	57	57	136	130	115	214	58	42	28	98
9.....	98	280	56	58	136	130	125	290	63	36	29	98
10.....	98	280	56	58	136	130	135	378	220	36	31	98
11.....	98	280	58	56	136	130	135	378	311	43	33	98
12.....	98	280	58	56	136	130	135	378	241	74	32	98
13.....	98	270	58	56	130	130	135	451	36	200	31	98
14.....	98	260	59	56	130	130	150	530	63	223	31	98
15.....	104	250	63	60	130	130	150	503	74	298	32	110
16.....	104	270	63	60	130	130	150	402	74	324	30	98
17.....	104	250	63	59	130	123	165	280	53	272	29	98
18.....	104	250	63	59	130	123	165	184	41	200	29	104
19.....	98	165	63	59	130	123	135	141	35	36	27	104
20.....	98	58	63	59	130	123	167	141	50	42	75	104
21.....	98	54	61	57	130	123	178	111	126	44	173	104
22.....	98	51	61	57	130	123	324	86	74	58	173	104
23.....	98	54	60	57	130	123	324	86	16	63	173	104
24.....	98	55	60	57	130	130	324	74	53	63	173	104
25.....	104	56	60	57	130	130	324	63	311	58	165	98
26.....	104	55	60	57	130	130	298	74	241	58	165	98
27.....	104	50	60	57	130	130	298	63	24	58	165	104
28.....	143	48	60	56	130	130	248	46	21	58	116	98
29.....	165	48	58	56	.....	130	232	175	21	58	98	98
30.....	181	48	58	104	.....	130	232	53	28	58	98	98
31.....	214	.....	58	143	.....	130	.....	63	.....	86	98	.....

Norm.— Discharge April 3 to 13, 19 to 28 and May 18 to July 12 determined from special rating curves based on discharge measurements because of logs on the control. Discharge September 21 to 23 estimated because of logs on the control.

Monthly discharge of Middle Branch of Moose River at Old Forge, for the year ending September 30, 1918
[Drainage area, 51.5 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	214	98	109	2.12	2.44
November.....	311	48	190	3.69	4.12
December.....	63	49	58	1.13	1.30
January.....	143	56	61.6	1.20	1.38
February.....	143	130	133	2.58	2.69
March.....	130	123	128	2.49	2.87
April.....	324	106	183	3.56	3.97
May.....	530	46	218	4.24	4.89
June.....	311	16	87.1	1.69	1.89
July.....	324	25	87.6	1.70	1.96
August.....	173	27	72.2	1.40	1.61
September.....	110	98	101	1.96	2.19
The year.....	530	16	119	2.31	31.31

BEAVER RIVER AT STATE DAM NEAR BEAVER RIVER P. O.

Location.—At the concrete storage dam, at the outlet of Beaver river flow, about 7½ miles west of Beaver River P. O., Herkimer county, and 7 miles above Beaver lake at Number Four.

Records available.—May 11, 1908, to September 30, 1918.

Drainage area.—176 square miles. (Measured on U. S. G. S. topographic maps.)

Gages.—Elevation of water surface in the reservoir is determined by a staff gage in two sections, on the west corner of the gage house; read by James Dunbar, gate tender. The mean elevation of the crest of the spillway is at gage height 16.96 feet.

Prior to September 29, 1913, elevation of water surface was determined by measuring the distance from the water surface to a reference point set at the elevation of the crest of the spillway.

Widths of sluice gate openings determined by measuring on the gate stems the distance they have been raised.

Discharge measurements.—Current meter measurements made from a temporary foot bridge at the mouth of the outlet tunnel, below the gates.

Determination of discharge.—Records include the discharge through one or more of four 4-foot circular sluice gates, when opened, the discharge over the spillway and the discharge through the logway at the west end of the spillway.

The sluice gages have been rated by current meter measurements made at different lake elevations but no measurements have been made of the discharge over the spillway or through the logway. Theoretic coefficients based on the Cornell Experiments* have been used to compute ratings for the spillway and logway.

* United States Geological Survey Water Supply Paper 200.

Regulation.—At ordinary stages the discharge of Beaver river is completely regulated by the operation of the sluice gates.

Extremes of stage.—Maximum elevation of water surface, in reservoir recorded during year, 18.5 feet on April 4 and 5; minimum stage recorded, 7.85 feet at 9:35 A. M., February 13.

1908–1918: Maximum elevation of water surface in reservoir, 19.46 feet on March 29, 1913; minimum stage, 2.9 feet on September 29 and October 1, 1913.

Extremes of discharge.—Maximum daily discharge during year, 1,900 second-feet on April 5; minimum discharge, zero, during periods when gates were closed and there was no flow over spillway.

1908–1918: Maximum discharge, 3,296 second-feet on May 2, 1911.

Accuracy.—Stage discharge relation permanent. Probably not affected by ice. Rating curves for sluice gates well defined. Lake gage read to half-tenths once daily. The accuracy of these computations depends to a large extent upon care to which the gates were set to the recorded openings. Results, fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

*Beaver River at S'a's Dam near Beaver River
Table of Gate Openings for year ending September 30, 1918*

Gate No.	Width of opening	Date	Time opened	Time closed
1.....	48 inches.....	April 10.....	7:00 A. M.....	5:00 P. M.
	48 inches.....	April 14.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 15.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 16.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 17.....	6:00 A. M.....	5:00 P. M.
4.....	48 inches.....	Oct. 1.....	Beginning of day	
	.....	April 13.....	.....	9:30 A. M.
	24 inches.....	April 13.....	9:30 A. M.....	
	.....	April 14.....	.....	6:00 A. M.
	48 inches.....	April 14.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 15.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 16.....	6:00 A. M.....	6:00 P. M.
	48 inches.....	April 17.....	6:00 A. M.....	
	.....	April 24.....	.....	9:00 A. M.
	24 inches.....	April 24.....	9:00 A. M.....	
	.....	May 7.....	.....	4:00 P. M.
	24 inches.....	July 10.....	7:00 A. M.....	
	.....	July 30.....	.....	7:00 A. M.
	48 inches.....	July 30.....	7:00 A. M.....	
	.....	Sept. 30.....	.....	Still open.
Logway Full.....	.....	April 4.....	8:00 A. M.....	
	.....	April 9.....	.....	5:30 P. M.

Daily gage height, in feet, at Little Dam in Beaver River, near Beaver River, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	10.9	17.1	16.45	13.7	9.8	12.5	17.5	17.95	17.8	17.35	16.5	11.5
2.....	10.75	17.4	16.4	13.55	9.7	12.8	17.75	18.0	17.7	17.4	16.4	11.35
3.....	10.6	17.4	16.3	13.4	9.25	13.0	18.2	18.0	17.7	17.5	16.2	11.1
4.....	10.5	17.5	16.35	13.2	9.0	13.1	18.5	18.0	17.7	17.45	16.0	11.0
5.....	11.0	17.45	16.3	13.0	8.9	13.4	18.5	17.95	17.7	17.4	15.8	10.85
6.....	11.2	17.45	16.2	12.9	8.8	13.65	18.4	17.9	17.7	17.4	15.6	10.7
7.....	11.2	17.4	16.1	12.8	8.7	13.8	18.2	17.85	17.75	17.4	15.5	10.55
8.....	11.2	17.4	16.0	12.7	8.6	13.9	18.2	17.8	17.85	17.4	15.4	10.4
9.....	11.4	17.25	15.9	12.55	8.5	14.0	18.2	17.9	17.85	17.45	15.2	10.2
10.....	11.6	17.25	15.85	12.5	8.1	14.2	18.2	18.0	17.9	17.45	15.0	10.0
11.....	11.75	17.25	15.8	12.4	8.0	14.25	18.1	18.1	17.9	17.4	14.9	9.9
12.....	11.9	17.2	15.7	12.3	7.9	14.3	17.9	18.2	18.0	17.3	14.8	9.8
13.....	12.3	17.1	15.65	12.15	7.85	14.4	17.85	18.3	18.0	17.3	14.6	9.7
14.....	12.3	17.05	15.5	12.0	7.9	14.5	17.85	18.4	18.0	17.3	14.5	9.6
15.....	12.3	17.0	15.45	11.8	8.15	14.55	17.7	18.4	18.05	17.3	14.3	9.6
16.....	12.3	17.0	15.3	11.7	8.2	14.6	17.8	18.3	17.9	17.3	14.1	9.75
17.....	12.3	17.0	15.2	11.6	8.4	14.6	18.0	18.25	17.8	17.3	13.9	9.8
18.....	12.5	16.9	15.1	11.5	8.45	14.6	18.1	18.0	17.7	17.3	13.7	9.9
19.....	12.7	16.9	15.1	11.4	8.5	14.6	18.1	17.9	17.7	17.25	13.5	10.2
20.....	13.0	16.9	15.0	11.3	9.2	14.4	18.0	17.9	17.7	17.2	13.3	10.5
21.....	13.4	16.9	14.9	11.2	9.55	14.2	18.0	17.95	17.6	17.15	13.2	10.8
22.....	14.0	16.9	14.85	11.1	9.8	15.0	18.1	18.0	17.6	17.1	13.0	11.1
23.....	14.2	16.9	14.8	11.0	10.0	15.1	18.1	17.9	17.55	17.1	12.8	11.3
24.....	14.4	16.9	14.7	10.8	10.5	15.4	18.1	17.85	17.5	17.05	12.6	11.45
25.....	14.6	16.9	14.55	10.6	10.9	15.7	18.1	17.9	17.5	17.0	12.4	11.55
26.....	14.8	16.9	14.4	10.45	11.6	16.1	18.0	17.9	17.45	16.9	12.2	11.6
27.....	15.0	16.85	14.3	10.3	11.9	16.3	17.9	17.9	17.42	16.85	12.1	11.65
28.....	15.3	16.7	14.2	10.2	12.2	16.5	17.8	18.0	17.4	16.85	12.0	11.7
29.....	15.6	16.6	14.1	10.1	.....	16.8	17.8	18.0	17.38	16.8	11.95	11.8
30.....	16.0	16.5	13.9	10.0	.....	17.0	17.85	17.9	17.25	16.8	11.8	11.9
31.....	16.9	.....	13.85	9.9	.....	17.2	.....	17.8	.....	16.6	11.65	.....

Monthly discharge of Beaver River near Beaver River, for the year ending September 30, 1918
[Drainage area, 176 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	259	200	228	1.30	1.50
November.....	536	253	328	1.86	2.08
December.....	252	238	246	1.40	1.61
January.....	237	199	219	1.24	1.43
February.....	224	166	188	1.07	1.11
March.....	338	227	245	1.39	1.60
April.....	1,900	536	1,100	6.22	6.94
May.....	1,290	552	845	4.80	5.53
June.....	835	173	475	2.70	3.01
July.....	362	160	237	1.35	1.56
August.....	253	218	237	1.35	1.56
September.....	221	194	208	1.18	1.32
The year.....	1,900	160	380	2.16	29.25

OSWEGATCHIE RIVER NEAR HEUVELTON

Location.—2½ miles above Heuvelton, St. Lawrence county, 3 miles below Rensselaer Falls and 7 miles above mouth of Indian river (outlet to Black lake).

Drainage area.—961 square miles. (Measured on U. S. G. S. topographic maps and U. S. G. S. map of State of New York.)

Records available.—June 23, 1916, to September 30, 1918.

Gage.—Gurley seven-day water-stage recorder on the right bank, about 2½ miles above Heuvelton, installed September 16, 1916. Prior to this date gage height was determined by measuring the distance from a reference point to the water surface. Recorder inspected by George Todd.

Channel and control.—Solid rock.

Extremes of discharge.—Maximum stage from water-stage recorder, 6.6 feet from midnight to 8 P. M., April 4; (discharge, 9,220 second-feet); minimum stage from water-stage recorder, 0.95 foot at 5 A. M., August 24; (discharge, 340 second-feet).

1916–1918: Maximum stage from water-stage recorder, 7.6 feet from 9 to 12 A. M., March 30, 1917; (discharge, 11,700 second-feet); minimum stage from water-stage recorder, 0.91 foot at 11 P. M., October 16, 1916; (discharge, 320 second-feet).

Ice.—Stage-discharge relation slightly affected by ice.

Regulation.—Some diurnal fluctuation due to mills at Rensselaer Falls and above. Seasonal flow regulated by storage in Cranberry lake.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined between 400 and 15,000 second-feet. Stage-discharge relation affected by ice during a portion of the period from January to March. The operation of water-stage recorder satisfactory during the year. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for period when the stage-discharge relation was affected by ice, when results were fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Oswegatchie River at Heuvelton, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Dec. 20 <i>a</i>	J. W. Moulton.....	1.47	675
Jan. 12 <i>a</i>	E. D. Burchard.....	1.50	656
Feb. 14 <i>b</i>	J. W. Moulton.....	2.02	735
Mar. 16 <i>a</i>	do.....	2.60	1,780
Apr. 9.....	E. D. Burchard.....	4.46	4,830
June 7.....	M. H. Carson.....	1.95	1,180

a Measurement made through partial ice cover.

b Measurement made through complete ice cover.

Daily discharge, in second-feet, of Oswegatchie River near Heuvelton for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	513	3,700	1,060	650	500	4,800	6,450	1,480	1,600	800	446	452
2.....	560	3,780	1,530	600	600	4,000	7,890	1,520	1,590	791	426	440
3.....	620	3,700	1,410	500	500	3,400	8,990	1,700	1,490	800	520	404
4.....	600	3,210	1,190	500	500	3,000	9,220	2,180	1,290	966	510	459
5.....	770	2,750	1,040	550	460	2,600	8,990	2,320	1,230	863	495	513
6.....	870	2,320	956	550	700	2,600	8,100	2,180	1,140	686	480	499
7.....	938	2,040	872	550	600	2,200	6,850	1,910	1,110	600	490	492
8.....	881	1,700	755	500	380	1,910	5,480	1,720	1,470	555	400	485
9.....	909	1,470	600	550	420	1,780	4,830	1,630	2,320	562	440	492
10.....	966	1,360	592	550	550	1,650	4,560	1,780	2,530	728	541	472
11.....	1,020	1,240	694	480	550	1,650	4,380	2,040	2,530	881	719	520
12.....	1,080	1,100	654	650	500	1,650	4,040	2,390	2,460	947	863	492
13.....	1,060	1,080	615	650	600	1,650	3,870	3,780	2,460	938	800	446
14.....	1,100	985	678	600	700	1,560	3,870	4,650	2,750	854	622	446
15.....	1,240	881	800	600	1,000	1,650	3,960	6,050	2,980	800	555	420
16.....	1,410	809	764	650	1,800	1,910	3,620	5,860	2,900	719	555	459
17.....	1,410	809	719	650	2,000	1,840	3,370	5,480	2,390	615	541	472
18.....	1,400	800	702	650	2,200	2,040	3,870	4,040	1,970	615	520	534
19.....	1,360	881	686	600	2,600	2,600	3,370	3,530	1,660	600	485	555
20.....	1,540	1,000	662	550	4,000	3,450	2,820	2,900	1,330	622	466	938
21.....	2,020	985	670	480	4,400	5,100	2,750	2,530	1,130	593	492	1,170
22.....	2,180	1,080	881	550	4,200	6,650	2,980	2,460	1,040	555	459	1,420
23.....	2,180	1,310	995	650	4,000	7,680	2,980	2,460	966	513	398	1,840
24.....	1,980	1,410	1,040	650	3,800	7,890	2,820	2,250	918	506	355	1,730
25.....	2,320	1,360	1,040	600	3,200	7,890	2,600	2,040	1,000	459	398	1,740
26.....	2,530	1,210	938	600	4,000	7,470	2,890	1,840	1,100	433	420	1,780
27.....	2,600	1,060	976	600	5,000	6,850	2,180	1,780	1,040	440	392	1,980
28.....	2,600	956	918	460	5,000	6,250	1,910	1,720	928	420	420	1,840
29.....	2,460	881	900	420	.....	5,670	1,730	1,840	863	446	446	1,590
30.....	2,530	809	800	420	.....	5,480	1,570	1,840	800	459	446	1,510
31.....	3,290	.....	750	480	.....	5,480	.....	1,730	.....	485	472	.....

NOTE.— Discharge December 28 to March 7 estimated, because of ice, from discharge measurements, weather records and study of gage height graph. Discharge August 4 to 9 estimated by study of gage height graph.

Monthly discharge of Oswegatchie River near Heuvelton, for the year ending September 30, 1918
[Drainage area, 961 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	3,290	513	1,520	1.58	1.82
November.....	3,780	800	1,560	1.62	1.81
December.....	1,530	592	867	.902	1.04
January.....	650	420	564	.588	.68
February.....	5,000	380	1,960	2.04	2.12
March.....	7,890	1,590	3,890	4.04	4.66
April.....	6,050	1,480	2,630	2.74	3.16
May.....	2,980	800	1,630	1.70	1.90
June.....	966	420	653	.679	.78
July.....	863	355	502	.522	.60
August.....	1,980	404	886	.922	1.03
September.....					
The year.....	9,220	355	1,750	1.82	24.71

EAST BRANCH OF OSWEGATCHIE RIVER AT NEWTON FALLS

Location.— 600 feet below the lower dam of the Newton Falls Paper Co., in the village of Newton Falls, St. Lawrence county, 4 miles above the mouth of Little river and 10 below the outlet of Cranberry lake.

Drainage area.— 166 square miles. (Measured by engineers of the State of New York Conservation Commission.)

Records available.— October 6, 1912, to September 30, 1913.

Gage.— Vertical staff on left bank about 600 feet above the lower dam; read by Henry Van Waldick.

Discharge measurements.— Made by wading at low stages and from a cable 30 feet above gage at high stages.

Channel and control.— Small boulders and rock, covered with waste from pulp mill.

Extremes of discharge.— Maximum stage recorded during year, 4.53 feet at 5:10 p. m., May 16; (discharge, 1,240 second-feet); minimum stage is reached nearly every Sunday during low-water period when paper mills shut down.

1912-1913: Maximum stage recorded, 6.1 feet at 5:15 p. m., March 28, 1913; (discharge, 2,200 second-feet.)

Ice.— Stage-discharge relation affected by ice only for a short time during extremely cold weather.

Regulation.— Some diurnal fluctuation in flow caused by the paper mills. Seasonal flow largely controlled by storage at Cranberry lake.

Accuracy.— Stage-discharge relation practically permanent. Not affected by ice during year. Rating curve well defined between 20 and 1,200 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to the rating table weighted mean gage heights based on observer's notes concerning operation of paper mills. Results good.

Co-operation.— Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of East Branch of Oswegatchie River at Newton Falls, during the year ending September 30, 1913

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
Feb. 12 a.....	J. W. Moulton.....	2.63	399
April 7.....	E. D. Burchard.....	1.31	168
7.....	do.....	.85	94
7.....	do.....	1.05	117
June 25.....	J. W. Moulton.....	2.78	508
25.....	do.....	2.66	473
25.....	do.....	2.42	412
July 17.....	do.....	2.09	318
17.....	do.....	1.99	296
17.....	do.....	1.98	295
17.....	do.....	1.93	291

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of East Branch of Oswegatchie River, Newton Falls, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	148	350	363	22	363	430	460	622	416	326	304	20
2.....	863	315	180	363	363	430	588	810	242	293	304	388
3.....	338	223	214	376	22	22	460	1,030	416	20	350	376
4.....	338	22	272	326	416	460	506	1,030	402	20	326	338
5.....	315	338	272	338	416	430	522	538	445	326	326	338
6.....	350	338	232	22	402	460	416	852	326	20	326	338
7.....	22	252	252	338	45	445	152	506	389	20	293	338
8.....	490	188	232	350	402	326	522	506	416	376	350	130
9.....	402	293	232	338	416	293	490	506	304	262	326	338
10.....	389	163	653	338	22	22	460	571	588	475	350	376
11.....	376	180	852	315	430	430	416	694	894	293	137	293
12.....	350	223	214	315	416	460	430	554	852	376	326	350
13.....	376	205	223	22	430	445	402	894	1,120	350	460	430
14.....	171	223	196	326	193	430	144	938	1,120	20	389	363
15.....	376	252	445	338	460	416	460	1,220	1,070	304	363	242
16.....	350	252	22	315	445	490	506	1,220	588	304	850	350
17.....	338	242	554	326	22	22	554	1,070	810	315	376	363
18.....	282	232	363	315	460	338	554	938	554	282	137	363
19.....	315	350	283	326	445	445	389	770	430	272	304	445
20.....	338	304	389	350	460	350	363	770	402	262	326	402
21.....	326	293	338	338	430	445	20	588	293	20	326	389
22.....	293	272	363	338	460	490	522	522	242	232	338	326
23.....	363	293	87	350	460	430	445	522	202	282	304	363
24.....	272	304	350	363	22	152	402	490	350	282	363	363
25.....	262	205	363	350	475	430	506	490	326	304	130	282
26.....	262	223	376	350	430	338	389	282	304	272	416	350
27.....	272	223	522	22	445	445	376	588	326	262	376	376
28.....	22	376	363	350	460	460	20	460	315	242	326	338
29.....	76	283	338	304	.....	445	152	490	304	252	363	293
30.....	272	363	99	252	.....	460	350	522	293	326	376	522
31.....	262	.....	163	252	.....	202	.....	475	.....	293	338	.....

Monthly discharge of East Branch of Oswegatchie River at Newton Falls, for the year ending September 30, 1918

[Drainage area 166 square miles.]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	430	22	292	1.76	2.03
November.....	376	22	259	1.56	1.74
December.....	352	22	316	1.90	2.19
January.....	376	22	291	1.75	2.02
February.....	475	22	350	2.11	2.20
March.....	490	22	367	2.21	2.55
April.....	554	20	399	2.40	2.68
May.....	1,220	282	692	4.17	4.81
June.....	1,120	202	491	2.96	3.30
July.....	475	20	248	1.49	1.72
August.....	400	130	325	1.96	2.26
September.....	522	20	338	2.04	2.28
The year.....	1,220	20	364	2.19	29.78

WEST BRANCH OF OSWEGATCHIE RIVER NEAR HARRISVILLE

Location.—At the highway bridge near Geers Corners, about 2½ miles down-stream from Harrisville, Lewis county.

Drainage area.—245 square miles. (Measured on U. S. G. S. topographic maps and U. S. G. S. map of State of New York.)

Records available.—July 1, 1916, to September 30, 1918.

Gage.—Vertical staff in three sections on the right bank. One section reading from 0.0 to 3.3 feet about 25 feet below bridge, 2 sections graduated from 3.3 to 10.1 feet on down-stream side of bridge abutment; read by Frank Osborne.

Discharge measurements.—Made from a cable about 200 feet above the bridge or by wading.

Channel and control.—Rocky and rough; probably permanent.

Extremes of discharge.—Maximum stage recorded, 7.4 feet at 6 P. M., April 3; (discharge, 3,980 second-feet); minimum stage recorded, 1.1 feet at 7 A. M., August 28 and 29; (discharge, 42 second-feet).

1916–1918: Maximum stage recorded, 8.1 feet at 6:30 A. M. and 6 P. M., March 28, 1917; (discharge, 4,880 second-feet); minimum stage recorded, 1.10 feet at 6 P. M., August 11, 1917, and 7 A. M., August 28 and 29, 1918; (discharge, 42 second-feet).

Ice.—Stage-discharge relation probably not affected by ice.

Regulation.—The pulp mill at Harrisville causes some diurnal fluctuation.

Accuracy.—Stage-discharge relation practically permanent. Not affected by ice. Rating curve well defined between 50 and 4,000 second-feet. Gage read to half tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of West Branch of Oswegatchie River at Harrisville, during the year ending September 30, 1918

DATE	Made by	Gage height	Discharge
		<i>Feet</i>	<i>Sec.-ft.</i>
Feb. 12.....	J. W. Moulton.....	1.99	165
April 8.....	E. D. Burchard.....	4.88	1,580
June 26.....	J. W. Moulton.....	2.63	3.39

Daily discharge in second-feet, of West Branch of Oswegatchie River near Harrisville, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	158	1,960	305	106	106	1,560	1,800	560	480	220	195	54
2.....	245	1,640	335	115	91	1,210	2,890	650	422	440	170	70
3.....	220	1,350	305	106	106	1,090	3,980	650	405	370	124	58
4.....	275	1,090	245	106	106	970	3,300	600	352	245	106	58
5.....	335	850	232	91	98	800	2,690	600	320	275	106	79
6.....	405	650	220	68	91	750	2,130	560	275	245	124	91
7.....	388	560	245	77	106	650	1,640	520	520	245	77	74
8.....	460	422	170	85	91	560	1,560	600	1,090	220	106	77
9.....	480	405	158	77	85	480	1,640	600	1,210	245	195	54
10.....	480	370	170	79	77	480	1,800	560	1,030	370	320	63
11.....	405	352	170	91	115	440	1,640	650	910	335	245	66
12.....	305	370	170	124	124	370	1,420	800	850	305	158	56
13.....	370	335	158	98	146	405	1,280	1,150	970	320	124	70
14.....	520	275	170	79	220	370	1,210	1,720	1,090	275	135	70
15.....	560	220	170	158	440	370	1,210	1,800	970	275	91	68
16.....	560	220	195	115	480	370	1,210	1,490	750	220	66	91
17.....	480	260	182	106	480	370	1,350	1,210	650	195	63	106
18.....	520	275	207	106	560	405	1,350	1,030	520	208	68	275
19.....	520	305	158	115	650	440	1,350	850	440	195	79	320
20.....	750	405	170	106	1,210	600	1,210	750	352	170	70	460
21.....	970	370	195	124	1,490	850	1,090	700	320	146	68	750
22.....	1,030	405	207	98	1,350	1,350	1,090	650	388	124	68	850
23.....	850	460	195	124	1,350	1,800	1,150	560	422	106	51	650
24.....	750	440	195	146	1,210	1,960	1,090	480	480	124	60	700
25.....	850	370	195	124	1,210	1,960	970	440	422	115	58	800
26.....	1,090	335	207	124	1,800	1,960	910	460	335	146	63	800
27.....	1,090	335	260	124	1,800	1,640	800	560	305	146	56	600
28.....	910	305	195	98	1,720	1,350	700	650	245	106	50	560
29.....	700	275	170	79	.....	1,280	650	700	275	98	54	560
30.....	850	290	170	98	.....	1,280	600	650	245	195	58	520
31.....	1,420	.....	115	106	.....	1,420	.....	560	.....	245	56	.....

Monthly discharge of West Branch of Oswegatchie River near Harrisville, for the year ending September 30, 1918

[Drainage are, 245 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	1,420	158	611	2.50	2.88
November.....	1,960	220	530	2.16	2.41
December.....	335	115	201	.82	.95
January.....	158	68	105	.429	.38
February.....	1,800	77	618	2.52	2.62
March.....	1,960	370	953	3.89	4.48
April.....	3,980	600	1,520	6.12	6.94
May.....	1,800	440	766	3.13	3.61
June.....	1,210	245	568	2.32	2.59
July.....	440	98	222	.916	1.05
August.....	320	51	105	.429	.49
September.....	650	54	302	1.23	1.37
The year.....	3,980	51	540	2.20	29.77

RAQUETTE RIVER AT PIERCEFIELD

Location.— One-half mile below the dam of the International Paper Co. at Piercefield, St. Lawrence county, and about ¾ mile above head of Black rapids.

Drainage area.— 723 square miles (all but 16 square miles measured on U. S. G. S. topographic maps).

Records available.— August 20, 1908, to September 30, 1918.

Gage.— Stevens water-stage recorder installed October 22, 1912 in a galvanized sheet-iron house over a concrete well, connected with the river by a 4-inch cast-iron pipe, located on the left bank about ½ mile below dam. Prior to January 1, 1913, the following gages were used: August 20, 1908 to August 20, 1910, vertical staff fastened to an old pine stump; August 20, 1910 to December 31, 1910, chain fastened to same stump and having same datum; January 1, 1911 to December 31, 1912, same chain gage with datum lowered 2 feet. Water-stage recorded was set at this datum. Recorder inspected by M. O. Wood.

Discharge measurements.— Made from a cable ¾ mile below gage, just above Black rapids.

Channel and control.— Channel oposite gage is a deep pond with no perceptible velocity. Control point is at head of Black rapids.

Extremes of discharge.— Maximum stage during year from water-stage recorder, 10.6 feet at 1 P. M., April 2; (discharge, 5,990 second-feet); minimum stage from water-stage recorder, 1.8 feet at 3 P. M., January 20; (discharge, 56 second-feet).

1908–1918: Maximum stage from water-stage recorder, 11.68 feet at 3 A. M., April 1, 1913; (discharge, 7,100 second-feet); minimum stage from water-stage recorder, 0.85 foot at 11 A. M., September 2, 1913; (discharge, about 10 second-feet).

Ice.— Rapids that form control rarely freeze and measurements when the pond was covered with ice indicate that the stage-discharge relation was not affected.

Regulation.— Large diurnal fluctuation in flow caused by dam during low and medium stages. Numerous lakes in the upper part of the drainage afford considerable storage, most of which is so controlled that the effect on the seasonal distribution of flow is large.

Accuracy.— Stage discharge relation practically permanent. Not affected by ice. Rating curve well defined between 50 and 7,000 second-feet. Operation of the water-stage recorder satisfactory throughout the year. Daily discharge ascertained by use of discharge integrator. Results good.

Co-operation.— Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission. Water-stage recorder inspected by an employee of the International Paper Company.

Discharge measurements of Raquette River at Piercefield, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		Feet	Sec.-ft.
Oct. 4.....	E. D. Burchard.....	4.05	475
Feb. 7 a.....	J. W. Moulton.....	4.21	387
Mar. 12.....	do	6.08	1,420
May 10.....	do	8.50	3,550

a Measurement made through partial ice cover.

Daily discharge, in second-feet of Raquette River at Piercesfield, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	318	1,800	1,070	620	300	915	1,900	3,900	1,980	854	865	235
2.....	480	1,930	676	450	275	950	3,290	3,850	1,750	1,250	765	259
3.....	485	1,980	1,000	440	140	490	2,980	3,870	1,960	1,200	740	370
4.....	496	2,020	1,000	470	70	975	3,280	3,900	2,070	782	485	523
5.....	484	2,319	887	550	450	1,670	3,610	3,840	1,970	962	565	387
6.....	480	2,240	654	144	550	1,200	3,740	3,880	1,870	1,270	740	328
7.....	226	2,180	668	210	460	1,110	3,820	3,830	1,970	824	713	204
8.....	309	2,140	696	254	209	1,100	3,850	3,800	1,990	964	710	117
9.....	510	2,030	436	315	245	1,180	4,050	3,510	1,690	1,260	746	273
10.....	480	1,950	778	410	200	620	4,150	3,550	2,090	1,210	677	417
11.....	484	1,680	914	440	105	1,200	4,180	3,650	2,010	1,260	421	407
12.....	502	1,870	708	450	338	1,180	4,170	3,500	2,160	1,240	838	408
13.....	519	1,770	556	204	592	1,170	4,120	3,840	2,200	1,280	830	408
14.....	238	1,730	538	301	535	1,120	4,010	3,780	2,150	830	867	385
15.....	425	1,680	734	366	520	1,200	3,910	3,750	2,130	1,330	862	154
16.....	564	1,630	420	130	450	1,230	3,920	3,740	1,860	1,380	845	278
17.....	758	1,630	680	254	246	460	3,890	3,680	2,150	1,330	835	458
18.....	978	1,270	800	448	250	1,000	3,970	3,680	2,060	1,350	523	414
19.....	959	1,470	620	448	518	1,230	4,020	3,470	1,990	1,290	775	453
20.....	1,000	1,550	520	180	540	1,140	3,930	3,430	1,950	1,380	845	531
21.....	387	1,590	510	297	575	1,120	4,170	3,300	1,850	898	785	532
22.....	810	1,550	650	356	700	1,130	4,180	3,170	1,480	1,400	710	300
23.....	1,310	1,400	271	196	935	1,140	4,400	3,050	1,330	1,380	695	401
24.....	1,350	1,330	577	344	365	655	4,300	2,840	1,520	1,110	657	614
25.....	1,480	812	277	408	638	1,330	4,220	2,900	1,440	1,100	277	780
26.....	1,440	1,180	464	383	810	1,550	4,290	2,450	1,270	1,110	417	1,070
27.....	1,460	884	579	190	810	1,540	4,200	2,720	1,170	960	417	1,070
28.....	1,070	1,220	580	86	920	1,560	4,060	2,440	1,230	640	340	1,110
29.....	1,570	1,210	580	398	.....	1,350	4,000	2,150	1,340	895	285	950
30.....	1,630	1,120	320	450	.....	1,640	3,880	2,000	754	983	205	1,290
31.....	1,730	.....	520	431	.....	1,380	.....	1,970	.....	975	160	.....

NOTE.— Discharge December 16–22, December 29 to January 5, and January 10–12 estimated because of no gage height record from study of gage height graph.

Monthly discharge of Raquette River at Piercesfield, for the year ending September 30, 1918
[Drainage area, 723 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	1,730	226	800	1.11	1.28
November.....	2,310	812	1,640	2.27	2.53
December.....	1,000	271	635	.87	1.01
January.....	620	86	343	.475	.55
February.....	935	70	453	.627	.65
March.....	1,640	460	1,130	1.56	1.80
April.....	4,400	1,900	3,880	5.37	5.99
May.....	3,900	1,970	3,340	4.62	5.33
June.....	2,200	754	1,780	2.46	2.74
July.....	1,400	640	1,120	1.55	1.79
August.....	867	160	632	.874	1.01
September.....	1,290	117	504	.697	.78
The year.....	4,400	70	1,360	1.88	25.46

ST. REGIS RIVER AT BRASHER CENTER

Location.—Near the steel highway bridge in the village of Brasher Center, St. Lawrence county, 5 miles down-stream from Brasher Falls, 6¼ miles below junction of East and West Branches of St. Regis river and about 12 miles above the mouth.

Drainage area.—621 square miles. (Measured on Post Route map.)

Records available.—August 22, 1910, to November 10, 1917, when the record was suspended.

Gages.—Staff, with inclined and vertical sections, on right bank about 600 feet above bridge. Installed June 24, 1916. Prior to this date, chain on right hand down-stream side of bridge. Gages not at same datum, subject to different controls; read by George Myers.

Discharge measurements.—Made from a cable at the staff gage, installed in June, 1916. Previously made from the highway bridge or by wading.

Channel and control.—Small boulders and coarse gravel at cable; large boulders and gravel, and very rough at bridge. Both fairly permanent.

Extremes of discharge.—1910–1917: Maximum stage recorded, 9.1 feet at 7 A. M., March 27, 1914; (discharge, 16,200 second-feet); minimum stage recorded, 5.25 feet at 5 P. M., August 8, 1917; (discharge, about 34 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation practically permanent. Affected by ice during a large portion of the period from December to March, inclusive. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for periods when the stage-discharge relation was affected by ice, when results were fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of St. Regis River at Brasher Center, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Oct. 2.....	J. W. Moulton.....	6.20	441
2.....	E. D. Burchard.....	6.21	442
Mar. 17 ^a	J. W. Moulton.....	6.67	545
April 10.....	E. D. Burchard.....	8.33	3,400

^a Measurement made through partial ice cover.

Daily discharge, in second-feet, of St. Regis River at Brusher Center, for the year ending September 30 1918

DAY	Oct.	Nov.	DAY	Oct.	Nov.	DAY	Oct.	Nov.
1.....	404	1,880	11.....	625.....		21.....	990.....	
2.....	510	1,520	12.....	625.....		22.....	930.....	
3.....	529	1,240	13.....	685.....		23.....	930.....	
4.....	586	1,050	14.....	705.....		24.....	810.....	
5.....	655	930	15.....	930.....		25.....	1,120.....	
6.....	810	810	16.....	810.....		26.....	1,380.....	
7.....	930	705	17.....	705.....		27.....	1,310.....	
8.....	810	625	18.....	605.....		28.....	1,180.....	
9.....	705	529	19.....	625.....		29.....	1,240.....	
10.....	685	438	20.....	990.....		30.....	1,590.....	
						31.....	1,960.....	

NOTE.— Records suspended November 10 because of no available gage reader.

RICHELIEU RIVER AT FORT MONTGOMERY, ROUSE POINT

Location.— Inside the fort, $\frac{3}{8}$ mile south of the International boundary, about $\frac{1}{2}$ mile above the head of Richelieu river, and the outlet of Lake Champlain, and 1 mile northeast of the village of Rouse Point, Clinton county.

Drainage area.— 7,870 square miles, including 436 square miles of water surface (from annual report of New York State Engineer and Surveyor).

Records available.— 1875 to 1918.

Gage.— Staff, inside the fort. Elevation of gage zero 92.50 feet above mean sea level, read by Thomas Bourke.

Extremes of stage.— Maximum elevation recorded during year, 98.95 feet on April 11, 12 and 15; minimum elevation recorded, 93.65 feet at 10 A. M., September 10.

1869–1918: Maximum elevation recorder, 103.28 feet April, 1869;* minimum elevation recorded, 91.9 feet November 13, 1918.

Co-operation.— Gage heights observed under direction of the corps of engineers of the United States Army and reported weekly to the United States Geological Survey.

* Hoyt, J. C., Stream Measurements 1903, North Atlantic, St. Lawrence River and Great Lakes Drainage; U. S. Geological Survey Water Supply Paper 97, page 340.

Daily gage height, in feet, of Richelieu River at Fort Montgomery, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	1.2	2.45	2.15	1.45	1.2	2.25	4.9	5.75	4.25	2.95	1.9	1.4
2.....	1.2	2.6	2.0	1.45	1.2	2.35	5.25	5.9	4.1	2.9	1.9	1.45
3.....	1.4	2.7	2.1	1.4	1.2	2.4	5.7	5.75	4.05	2.9	1.75	1.55
4.....	1.3	2.7	2.05	1.4	1.2	2.45	6.0	5.55	4.0	2.85	1.8	1.3
5.....	1.2	2.8	2.1	1.4	1.2	2.4	6.15	5.6	3.9	2.8	1.85	1.4
6.....	1.25	2.9	2.0	1.4	1.2	2.45	6.2	5.6	3.85	2.8	1.65	1.3
7.....	1.35	2.7	1.95	1.35	1.2	2.45	6.3	5.45	3.9	2.75	1.7	1.3
8.....	1.4	2.75	1.95	1.35	1.2	2.5	6.3	5.45	3.75	2.7	1.65	1.3
9.....	1.25	2.75	1.9	1.3	1.2	2.5	6.25	5.25	3.65	2.75	1.7	1.3
10.....	1.25	2.7	1.95	1.3	1.2	2.45	6.25	6.0	3.65	2.65	1.8	1.15
11.....	1.35	2.7	1.85	1.3	1.25	2.6	6.45	5.1	3.6	2.65	2.1	1.3
12.....	1.35	2.6	1.85	1.3	1.25	2.6	6.45	5.05	3.75	2.6	1.85	1.5
13.....	1.55	2.6	1.85	1.3	1.2	2.55	6.35	5.15	3.55	2.55	1.9	1.25
14.....	1.45	2.6	1.9	1.3	1.25	2.6	6.4	5.15	3.6	2.5	1.85	1.2
15.....	1.6	2.6	1.9	1.3	1.6	2.6	6.45	5.1	3.55	2.5	1.8	1.2
16.....	1.4	2.45	1.85	1.3	1.3	2.65	6.4	5.5	3.6	2.5	1.7	1.2
17.....	1.35	2.5	1.8	1.3	1.3	2.6	6.4	5.1	3.5	2.45	1.7	1.2
18.....	1.55	2.6	1.8	1.3	1.3	2.6	6.25	5.1	3.5	2.4	1.7	1.2
19.....	1.8	2.4	1.8	1.3	1.7	2.6	6.35	5.05	3.4	2.4	1.65	1.3
20.....	1.45	2.5	1.75	1.25	1.6	2.75	6.35	5.05	3.35	2.35	1.7	1.8
21.....	1.5	2.3	1.75	1.25	1.6	2.8	6.25	4.75	3.45	2.3	1.65	1.35
22.....	1.55	2.3	1.65	1.25	1.65	2.95	6.25	4.75	3.3	2.3	1.6	1.4
23.....	1.6	2.25	1.7	1.25	1.65	3.15	6.25	4.65	3.2	2.3	1.65	1.5
24.....	1.55	2.3	1.7	1.25	1.7	3.4	6.25	4.6	3.15	2.2	1.55	1.5
25.....	1.7	2.2	1.6	1.25	1.7	3.6	6.05	4.55	3.15	2.25	1.55	1.65
26.....	1.65	2.1	1.55	1.25	1.95	3.8	6.15	4.4	3.1	2.25	1.6	1.75
27.....	1.65	2.2	1.55	1.25	2.05	3.95	6.1	4.4	3.1	2.15	1.45	1.95
28.....	1.75	2.2	1.6	1.2	2.15	4.05	6.0	4.2	3.2	1.95	1.55	2.35
29.....	1.8	2.15	1.45	1.2	.....	4.2	6.05	4.25	3.1	2.0	1.8	2.2
30.....	1.9	2.2	1.5	1.2	.....	4.4	5.85	4.25	3.0	2.0	1.35	2.3
31.....	2.2	.....	1.45	1.2	.....	4.65	.....	4.3	.....	1.85	1.45	.....

LAKE GEORGE AT ROGERS ROCK

Location.—At a boathouse in a small bay on the north side of the steamboat landing at Rogers Rock, Essex county.

Drainage area.—Not measured.

Records available.—July 10, 1913, to September 30, 1918.

Gage.—Vertical staff fastened to a pile in the back end of the boathouse. Datum, 3.15 feet * below crest of dam at outlet of lake; read once daily by George O. Cook.

Extremes of stage.—Maximum stage recorded during year, 4.2 feet May 20, 22, 27, 30 and June 3; minimum stage recorded, 1.55 feet on February 16.

1913-1918: Maximum stage recorded, 4.98 feet on May 2, 1914; minimum stage recorded, 1.2 feet on November 21 and December 22, 1916.

Regulation.—The elevation of lake surface is regulated by the operation of gates and wheels at the dam at the outlet of the lake at Ticonderoga.

Co-operation.—Station established by the United States Geological Survey in co-operation with the Conservation Commission. Gage heights for current year furnished by International Paper Company.

* This figure determined by actual levels and supersedes the estimated figure previously published

Daily gage height, in feet, of Lake George at Rogers Rock, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	2.20	2.60	2.25	1.85	1.70	1.82	2.80	3.82	4.10	3.65	3.18	2.58
2.....	2.30	2.58	2.28	1.90	1.70	1.85	2.92	3.90	4.15	3.50	3.10	3.62
3.....	2.28	2.55	2.22	1.80	1.72	1.80	3.00	3.80	4.20	3.52	3.00	2.60
4.....	2.30	2.55	2.22	1.78	1.70	1.82	3.12	3.80	4.05	3.48	3.10	2.52
5.....	2.25	2.52	2.20	1.75	1.62	1.88	3.20	3.85	4.00	3.50	3.05	2.50
6.....	2.28	2.58	2.15	1.78	1.65	1.85	3.22	3.85	4.02	3.50	2.98	2.55
7.....	2.18	2.50	2.10	1.80	1.62	1.82	3.25	3.90	4.10	3.55	3.00	2.50
8.....	2.20	2.52	2.08	1.82	1.65	1.80	3.30	3.88	4.05	3.55	2.95	2.55
9.....	2.12	2.50	2.28	1.78	1.70	1.85	3.35	3.80	4.08	3.52	2.90	2.40
10.....	2.10	2.45	2.20	1.75	1.70	1.88	3.42	3.88	3.98	3.50	2.92	2.38
11.....	2.12	2.40	2.15	1.78	1.68	1.92	3.48	3.85	4.00	3.50	3.00	2.40
12.....	2.10	2.35	2.10	1.80	1.65	1.95	3.52	3.92	4.08	3.48	2.95	2.45
13.....	2.15	2.40	2.05	1.82	1.65	1.95	3.55	4.02	4.00	3.45	2.98	2.48
14.....	2.12	2.38	2.10	1.80	1.62	1.92	3.58	4.08	4.05	3.42	2.98	2.45
15.....	2.10	2.35	2.12	1.85	1.60	1.95	3.60	4.05	3.90	3.45	2.95	2.42
16.....	2.05	2.30	2.10	1.90	1.55	1.98	3.62	4.15	3.98	3.45	2.88	2.40
17.....	2.02	2.35	2.05	1.88	1.60	2.00	3.65	4.12	3.95	3.40	2.85	2.38
18.....	2.00	2.32	2.08	1.85	1.65	1.98	3.68	4.15	3.90	3.38	2.80	2.35
19.....	2.15	2.35	2.05	1.88	1.68	2.00	3.70	4.18	3.78	3.40	2.75	2.40
20.....	2.10	2.30	2.02	1.85	1.70	1.98	3.72	4.20	3.75	3.40	2.80	2.35
21.....	2.00	2.22	2.00	1.82	1.68	2.02	3.75	4.15	3.80	3.38	2.70	2.35
22.....	1.98	2.25	1.98	1.85	1.65	2.15	3.85	4.20	3.78	3.40	2.75	2.40
23.....	1.95	2.30	2.00	1.82	1.65	2.20	3.82	4.15	3.78	3.35	2.75	2.35
24.....	1.98	2.30	1.98	1.80	1.68	2.30	3.85	4.12	3.75	3.32	2.72	2.32
25.....	2.08	2.32	2.00	1.85	1.70	2.35	3.80	4.10	3.70	3.28	2.70	2.40
26.....	2.05	2.35	1.95	1.80	1.80	2.40	3.82	4.15	3.68	3.30	2.68	2.35
27.....	2.15	2.22	1.92	1.75	1.80	2.42	3.80	4.20	3.65	3.30	2.65	2.50
28.....	2.08	2.25	1.95	1.78	1.82	2.45	3.80	4.12	3.68	3.20	2.62	2.50
29.....	2.10	2.20	1.90	1.80	.....	2.50	3.82	4.12	3.62	3.25	2.60	2.48
30.....	2.50	2.25	1.88	1.78	.....	2.55	3.80	4.20	3.58	3.30	2.58	2.45
31.....	2.58	.....	1.88	1.75	.....	2.62	.....	4.18	.....	3.12	2.55	.....

AUSABLE RIVER AT AUSABLE FORKS

Location.—In the village of Ausable Forks, Clinton county, immediately below the junction of the East and West branches and about 15 miles above the mouth of the river.

Drainage area.—444 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—August 17, 1910, to September 30, 1918.

Gage.—Chain on left bank about 1,000 feet below junction of East and West branches; read by A. S. Baker.

Discharge measurements.—Made from a cable about 1½ miles below gage, or by wading either near the cable or a short distance above the gage.

Channel and control.—Stone and gravel, occasionally shifting. Channel divided by an island opposite the gage.

Extremes of discharge.—Maximum stage recorded during year 6.46 feet at 5:15 P. M., April 1, and 7 A. M., April 22; discharge, 6,070 second-feet; minimum stage recorded, 3.36 feet at 5 P. M., July 27; discharge, 94 second-feet.

1910–1918: Maximum stage recorded, 10.2 feet in the evening of March 27, 1913; discharge, about 25,000 second-feet; minimum stage recorded, 3.0 feet at 7 A. M., July 21, 1912; discharge, practically zero.

Special study.—A portable water-stage recorder was installed at this station and a continuous gage height record obtained July 11 to September 30, 1914, which showed a continual small fluctuation in stage. It was shown

that monthly mean discharge based on semi-daily gage heights is in error as follows: July 11-31, 3.5%; August, 4.1%; September, 0.5%. Some of the daily discharges showed greater errors, but these were largely compensating.

Ice.—Stage-discharge relation slightly affected by ice.

Accuracy.—Stage-discharge relation probably permanent between dates of shifting. Affected by ice for short periods from December to March. Rating curve fairly well defined between 175 and 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission.

Discharge measurements of Ausable River at Ausable Forks, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
		<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 10a.....	J. W. Moulton.....	3.59	124
May 4.....	do	4.78	1,790
May 6.....	do	5.28	2,840

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of Ausable River at Ausable Forks, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	371	1,440	234	220	80	890	4,210	3,690	656	345	250	1,230
2.....	417	1,010	221	220	80	668	5,600	3,320	588	998	196	567
3.....	371	751	189	260	80	1,060	3,950	3,690	679	436	170	436
4.....	379	599	183	260	85	557	2,490	1,830	557	336	164	221
5.....	1,090	546	208	220	100	515	1,730	1,440	345	294	142	227
6.....	739	455	202	160	110	398	1,350	2,160	319	302	121	611
7.....	597	436	183	130	100	362	1,530	2,720	465	407	121	679
8.....	455	388	170	120	95	371	1,620	2,950	1,230	484	142	426
9.....	398	407	157	120	100	407	2,380	1,440	1,940	526	5,310	362
10.....	345	362	180	120	110	354	1,530	1,260	998	526	2,600	294
11.....	319	311	180	110	110	319	1,260	2,720	515	505	2,050	234
12.....	398	328	190	100	140	336	1,120	1,350	1,130	536	1,940	177
13.....	1,010	302	200	90	200	426	1,010	1,620	1,530	515	1,620	170
14.....	578	264	220	80	407	417	1,200	3,070	1,180	684	567	929
15.....	567	280	200	80	864	407	2,270	1,730	813	536	465	436
16.....	955	264	200	90	800	336	1,620	1,200	567	407	302	354
17.....	567	227	220	100	505	319	2,600	929	484	336	257	679
18.....	484	272	220	110	436	526	2,600	851	388	319	227	1,180
19.....	465	280	200	110	668	788	1,830	764	328	302	189	1,260
20.....	903	280	160	140	3,190	788	1,440	1,040	257	250	164	702
21.....	727	280	160	130	942	1,260	1,440	1,030	264	214	196	1,100
22.....	588	272	160	120	903	2,050	5,030	764	214	214	177	1,210
23.....	484	311	180	110	890	3,070	2,490	800	328	189	177	1,070
24.....	515	311	200	110	788	2,160	2,600	702	567	164	177	1,040
25.....	864	202	220	120	714	1,730	1,440	588	546	153	164	1,180
26.....	788	208	240	130	3,070	1,350	1,350	825	407	153	183	1,350
27.....	1,070	221	240	130	2,160	1,040	1,350	825	354	102	177	2,490
28.....	1,260	208	220	110	1,620	903	1,830	764	311	132	164	1,530
29.....	1,620	208	220	110	.....	1,040	1,730	1,260	272	110	189	964
30.....	2,400	208	240	100	.....	1,350	3,690	903	242	234	183	813
31.....	3,070	.....	220	85	.....	1,830	.....	714	.....	436	183	.....

NOTE.—Discharge December 10 to February 13 estimated, because of ice, from discharge measurements, weather records and study of gage height graph.

Monthly discharge of Ausable River at Ausable Forks, for the year ending September 30, 1918
 [Drainage area, 444 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	3,070	319	800	1.80	2.08
November.....	1,440	202	388	.874	.98
December.....	240	157	201	.453	.52
January.....	260	80	132	.298	.34
February.....	3,190	80	691	1.56	1.62
March.....	3,070	319	904	2.04	2.35
April.....	5,600	1,010	2,210	4.98	5.56
May.....	3,690	588	1,580	3.56	4.10
June.....	1,940	214	616	1.39	1.55
July.....	998	102	358	.806	.93
August.....	5,310	121	612	1.38	1.59
September.....	2,490	170	798	1.80	2.01
The year.....	5,600	80	772	1.74	23.63

SARANAC RIVER NEAR PLATTSBURG

Location.—At the Indian Rapids Power Plant (formerly known as Lozier Dam) of the Plattsburg Gas and Electric Company, about 6 miles above the mouth of the river at Plattsburg, Clinton county.

Drainage area.—607 square miles. (Measured on U. S. G. S. topographic maps.)

Records available.—March 27, 1903, to September 30, 1918.

Gages.—Crest gage a vertical staff on the angle of the wing wall at the end of the racks. Datum raised 0.76 foot August 20, 1906. Tail race gage a vertical staff spiked to timber work dike between tail race and river and about 50 feet below power house. Datum has changed slightly due to settling of crib work. Records of kilowatt output are obtained by a watt meter on switchboard at half-hour intervals.

An inclined staff gage at the cable station, about $\frac{1}{4}$ mile below the dam. Gages and watt meters read by power house operators.

Discharge measurements.—Made from a cable at head of Indian rapids, $\frac{1}{4}$ mile below the dam. Low water measurements made by wading under cable or in tail race.

Discharge rating.—Records include flow over concrete spillway 171.25 feet in crest length, a rating for which has been prepared by use of coefficients* derived from experiments made in the hydraulic laboratory of Cornell University on a model section of the dam; the discharge through two power units equipped with 300 kilowatt generators which have been rated by current meter measurements; and the discharge through two 5-foot waste gates when open.

* Horton, R. E., Weir experiments, coefficients and formulas, U. S. Geological Survey, Water Supply Paper 200, pages 98-100, 1907.

Occasional observations are made on the inclined staff gage at the cable as a check on the ratings of spillway and turbines.

Extremes of discharge.—Maximum daily discharge during year, 5,600 second-feet April 3; minimum daily discharge 200 second-feet, August 4.

1908-1918: Maximum daily discharge recorded, 6,410 second-feet, April 20, 1914; minimum daily discharge recorded, 90 second-feet, September 28, 1914.

Special study.—A portable water-stage recorder was operated at the cable for a short period in July, 1914. Mean daily discharge computed from its record compared very closely with mean daily discharge based on power plant ratings.

Ice.—The crest of the spillway is kept free from ice so that the stage-discharge relation is not affected.

Regulation.—The lakes and ponds on the main stream and tributaries above the station comprise a water surface area of about 25.5 square miles. The actual storage afforded by these reservoirs has been largely increased by the State dam at Lower Saranac lake, the operation of which affects the distribution of flow throughout the year.

Accuracy.—Discharge measurements made during the year indicate that the ratings of spillway and turbines have not changed. Discharge over the spillway ascertained by applying to the rating table mean gage heights for 6-hour periods. Discharge through the turbines ascertained by applying to their ratings, the mean K.W. output and head for 12-hour periods. Results fairly good.

Co-operation.—Station established and maintained by the United States Geological Survey in co-operation with the Conservation Commission. Gage height records and watt meter readings furnished by Plattsburg Gas and Electric Company, Herbert A. Stutchbury, Supt.

Discharge measurements of Saranac River, near Plattsburg, during the year ending September 30, 1918

DATE	Made by	Gage height	Dis-charge
May 9.....	J. W. Moulton.....	Feet 2.79	Sec.-ft. 1,300

Daily discharge, in second-feet of Saranac River near Plattsburg, for the year ending September 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1.....	740	1,040	440	330	450	1,550	3,500	1,750	1,040	700	350	420
2.....	880	940	440	440	640	2,600	4,900	2,000	1,300	700	290	470
3.....	1,080	660	520	410	440	1,500	5,600	1,700	920	620	300	390
4.....	940	820	410	520	860	1,200	4,000	1,650	800	580	200	370
5.....	880	760	370	450	410	1,100	3,200	1,800	820	700	250	360
6.....	920	700	360	480	420	920	2,700	1,600	700	620	310	390
7.....	720	740	300	540	700	900	2,450	1,600	1,240	900	290	620
8.....	760	760	260	340	840	800	2,600	1,550	1,300	740	220	600
9.....	520	780	230	520	440	760	2,500	1,500	1,060	540	520	600
10.....	460	740	420	560	620	620	2,000	1,300	920	840	780	580
11.....	500	660	310	470	880	780	1,800	1,250	860	780	900	580
12.....	430	800	280	580	470	820	1,650	1,400	1,000	720	1,180	560
13.....	560	800	470	540	640	780	1,600	1,300	1,060	740	1,220	620
14.....	490	800	450	810	580	960	1,800	1,450	1,080	440	1,180	700
15.....	620	780	470	750	580	820	1,850	1,250	960	700	940	600
16.....	520	720	410	680	660	840	2,100	1,300	920	580	720	600
17.....	480	760	560	460	920	620	2,050	1,350	880	400	620	560
18.....	600	660	430	390	840	900	2,100	1,240	860	480	520	640
19.....	520	620	300	560	640	860	1,950	1,250	840	580	600	900
20.....	560	520	370	280	760	900	1,850	960	800	580	390	900
21.....	640	500	390	520	2,200	1,450	1,800	1,000	800	460	480	1,080
22.....	660	480	370	310	1,500	2,050	2,200	740	780	540	500	1,220
23.....	540	410	290	300	1,240	2,900	2,200	820	840	580	490	1,040
24.....	540	270	370	240	960	2,300	2,050	920	820	520	490	1,020
25.....	620	225	260	330	1,020	2,300	1,850	820	800	1,140	430	1,200
26.....	880	290	480	380	1,550	2,300	1,750	1,040	720	840	420	1,300
27.....	700	260	370	700	2,000	2,000	1,700	1,200	680	600	370	1,600
28.....	680	320	320	1,060	1,900	1,900	1,500	1,400	700	370	360	1,600
29.....	880	500	470	410	.....	2,050	1,350	960	720	400	420	1,250
30.....	900	500	440	320	.....	2,500	1,700	940	680	310	400	1,180
31.....	1,220	.....	460	460	.....	2,800	.....	900	.....	310	380	.....

Monthly discharge of Saranac River near Plattsburg, for the year ending September 30, 1918
[Drainage area, 607 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
October.....	1,220	430	692	1.14	1.31
November.....	1,040	225	627	1.03	1.15
December.....	560	230	388	.639	.74
January.....	1,060	240	488	.804	.93
February.....	2,200	410	899	1.48	1.54
March.....	2,900	620	1,440	2.37	2.73
April.....	5,600	1,350	2,340	3.86	4.31
May.....	2,000	740	1,290	2.13	2.46
June.....	1,300	680	897	1.48	1.65
July.....	1,140	310	613	1.01	1.16
August.....	1,220	200	533	.878	1.01
September.....	1,600	360	798	1.31	1.46
The year.....	5,600	200	915	1.51	20.45

EIGHTH ANNUAL REPORT
OF THE
CONSERVATION COMMISSION

GENERAL INDEX

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STATE OF NEW YORK

IN SENATE

FEBRUARY 27, 1919.

Report of Hon. B. B. Odell, Ice Comptroller of the State of New York, Pursuant to a Resolution of the Senate, February 12, 1919, Relative to the Ice Situation in the City of New York.

To the Honorable, the Senate of the State of New York:

Pursuant to the resolution of Senator Black requesting information as follows, to-wit:

First: The amount of natural ice now in storage under the jurisdiction or direction of the Ice Comptroller.

Second: The capacity of any or all artificial ice plants doing business in the city of New York, in the State of New York, and.

Third: An estimate of the amount required by normal consumption in any one year in the city of Greater New York.

I beg leave to report as follows:

In answer to the first inquiry. During the winter of 1917-18 there were harvested and stored on the Hudson river, Rockland lake, Dykemans, Lake Mahopac, and at New Rochelle, 2,537,482 tons, of which there was still in storage on January 1, 1919, 607,457 tons which should weigh out in New York city 394,847 tons. I have no data as to harvesting since January 1, 1919, but understand that little or no ice has been secured on the river or

adjacent lakes. There may be an additional quantity to be added however, to that on hand as of January 1, 1919, but not of any considerable amount, and I think, therefore, that I am within bounds in stating the shortage at 1,500,000 tons.

Second: The daily capacity of ice manufacturing plants is as follows:

Borough of Manhattan.....	4,360 tons
Borough of Bronx.....	1,890 tons
Borough of Brooklyn.....	5,365 tons
Borough of Queens.....	1,500 tons
Borough of Richmond.....	265 tons
Total	<u>13 380 tons</u>

The answer to the third query can perhaps best be stated by submitting the sales by months of both manufactured and natural ice for 1918:

**STATEMENT OF ICE SALES IN GREATER NEW YORK BY MONTHS
DURING 1918.**

1918	Sale of Man- ufactured Ice (tons)	Sale of Natural Ice (tons)	Total Sales (tons)
January	82,346.34	.....	82,346.34
February	71,621.32	.....	71,621.32
March	85,073.04	.....	85,073.04
April	114,157.84	133,357	247,514.84
May	151,968.08	241,997	393,965.08
June	208,683.44	223,796	432,479.44
July	258,672.94	193,066	451,738.94
August	266,125.92	221,313	487,438.92
September	217,772.44	116,277	334,049.44
October	161,057.08	53,148	214,205.08
November	112,885.38	40,716	153,601.38
December	87,436.18	22,385	109,821.18
Grand Total.....	<u>1,817,800.00</u>	<u>1,246,055</u>	<u>3,063,855.00</u>

From my observation, so far as the city of New York is concerned, there is a serious menace of shortage during the months of May, June, July, August and part of September. It will be observed from the statement of sales that during the month of July when the ice manufacturers were operating at 100 per cent.

of capacity that the output was 258,672 tons, while the total demand for May was 393,965 tons, for June 432,479 tons, for July 451,738 tons, August 487,438 tons, and September 334,049 tons.

The difficulty which precludes the manufacturing of ice during the time when the demand is limited is the lack of storage capacity, not to exceed 25,000 tons of such storage capacity being available in the greater city of New York at the present time.

Outside of New York city, along the Hudson, there are but three or four ice manufacturing plants, and these are of very limited capacity, so that the danger of shortage is more menacing in these Hudson river towns and cities than in the city of New York.

In other parts of the State I have no information as to the ice on hand or the capacity of ice plants, my jurisdiction under the law being confined to the counties bordering upon the Hudson river, Long Island and Greater New York.

Dated, January 26, 1919.

Respectfully submitted,
B. B. ODELL.

STATE OF NEW YORK

SIXTY-THIRD ANNUAL REPORT

OF THE

Board of Managers

OF THE

THOMAS INDIAN SCHOOL

LOCATED ON THE

**Cattaraugus Indian Reservation
at Iroquois, N. Y.**

For the Year Ending June 30, 1918

**ALBANY
J. B. LYON COMPANY, PRINTERS
1919**

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GEORGE J. MENTLEY

WALTER S. KENNEDY

OFFICERS, TEACHERS AND EMPLOYEES

Superintendent

EMILY P. LINCOLN

Matron

HALLA WELLS

Coachman

JACOB GROSS

Watchman

HEENAN L. BENNETT

Housekeeper

AGNES M. REYNOLDS

Steward

IDA L. BUNN

Bookkeeper

EDNA A. TAYLOR

Stenographer and Storekeeper

ELEANOR L. JACKSON

Assistant Matron

ELSIE HAYWARD

Supervisor

KARL E. LAY

Attendants

JULIA WARREN
MINNIE McGUIRE
CARRIE DEAN
AGNES W. MILLS
ADDIE SKUSE
HANNAH NEEDHAM
PAULINE LAY
MINA PATTERSON

Physician

A. D. LAKE

Nurse

CHARLOTTE McLEAN

Seamstresses

JUSTINA LORENZ
EMMA DUNHAM

Cooks

CARRIE PIERCE
RACHAEL PIERCE

Vacancy

Assistant Cook

LETHA SHONGO

Head Laundress

BESSIE CLUTE

Domestic

MILDRED PARKER

Engineer and Electrician

FRED RUSSELL

Assistant Engineer and Electrician

SAMUEL DUNHAM

Fireman

TIMOTHY TILLOTSON

Mason and General Repairer

FRED PALMER

Farmer

CARL DANKERT

Gardener and Poultryman

GEORGE KEYS

Teamsters

LENN PERKINS

EMERY MILLER

Laborers

JOHN HENRY

PHILO JACKSON

HERMAN SHONGO

Head Teacher

JOHN C. BRENNAN

Grade Teachers

LOUISE A. COURTNEY

AUGUSTA ANDERSON

KATHERINE C. DUNHAM

GERTRUDE H. RAND

DONNA I. COLLINS

Kindergarten Teacher

CYRENE H. DAYTON

Domestic Science Teacher

KATHRYN GILLETTE

Music Teacher

RUTH H. BUTTS

Instructor in Carpentry

ANTON F. LORENZ

Oculist

RICHARD H. SATTERLEE

SIXTY-THIRD ANNUAL REPORT OF THE THOMAS INDIAN SCHOOL

To the Honorable, the Legislature of the State of New York:

In compliance with the provision of the State the undersigned members of the Board of Managers of the Thomas Indian School at Iroquois, New York, beg to submit their annual report for the year ending June 30, 1918.

During the past year we, as a Board have missed having with us in our meetings one of our members, Doctor Herman W. Johnson, who so unselfishly enlisted in the cause that is of such vital interest to our whole country. We not only missed his counsel but his pleasant genial way, for he is one of those persons who always make one feel better for having been in his presence. Governor Whitman granted him a leave of absence from the Board during the period of the war.

The regular work of the institution has been broken in upon to quite an extent this year on account of the presence at different times of some of the numerous contagious diseases, beside the unsettled condition that existed during the time the reservation was in quarantine for smallpox.

We commend to you for your consideration the Superintendent's report, including the list of appropriations desired of the coming Legislature and to the other reports attached thereto.

Respectfully submitted,

W. S. LAWTON, *President*,
GEO. J. MENTLEY, *Secretary*.
JOSEPHINE L. SISSON,
WALTER S. KENNEDY,
GRANT MT. PLEASANT,
WM. HATCH.

REPORT OF THE SUPERINTENDENT

JUNE 30, 1918.

To the Board of Managers of the Thomas Indian School:

In compliance with the statute, I present you herewith my report as Superintendent for the year ending June 30, 1918.

There were enrolled at the close of the school year 184 pupils. The average population being 177.19.

A short time after school started in September smallpox was discovered on the reservation and as a result of this nearly every employee and pupil were vaccinated. The reservation was quarantined for several weeks, only those holding a certificate of vaccination being able to pass the guards stationed at the roads leading off from the reservation. This epidemic resulted in over 100 cases on the reservation but none at the school.

After recovering from this suspense everything ran along nicely as far as sickness was concerned until after the holidays when we had an epidemic of measles, resulting in 111 cases and three deaths. Later on in the year we had fifteen cases of mumps and nine cases of scarlet fever.

The unsettled condition of our country affected considerably the working in the school, making a great many changes in the personnel of the institution. Some not staying long enough to even get familiar with the work before they would hear of some place where they were paying so much larger wages that they would leave, often before we would have time to even try to fill their place.

This unsettled condition affected the pupils as well and made it hard for them to get down to their studies, especially the boys, for most of the older ones preferred going out on the farm to work to staying inside and studying. However, taking everything in consideration, we feel quite pleased with the result, for our year's examinations show that ten passed Elementary U. S. History, twelve Arithmetic, nine Elementary English, sixteen Geography, twenty-one Spelling, ten Reading and ten Writing.

Mina Patterson, Mildred Parker, Elsie Pierce, Cassie Jimer-son, Bula Parker, Ethelyn Joe, Amy Blackchief, Clarinda Jack-son, Roland Sundown and William Jones, Jr., passed their examinations and graduated. The following program was ren-dered for the closing week:

Sunday, June 23, 7:15 P. M. Baccalaureate Sermon
Rev. James Craig Buchanan.

Monday, June 24. Picnic for Graduates

Tuesday, June 25, 7:45 P. M.
Musical and Domestic Science Exhibit

Thursday, June 27, 7:45 P. M. Operetta

Friday, June 28, 7:45 P. M. Closing Exercises
Address by Mr. George H. Smith.

The graduating class felt they received many valuable words of encouragement and advice from the baccalaureate sermon on Sunday evening.

Monday morning found each one ready at an early hour to start on the automobile ride and picnic and as the day was propitious a very delightful time was enjoyed at Point Graciot and Lilydale.

The musical and domestic science exhibit on Tuesday evening reflected like credit on pupils and teacher. The display from the culinary department received many words of commendation as did the dresses and other articles of wearing apparel made by the sewing classes. Following is the program of the musicale:

Piano Duet, Military March. Schubert
HARRIET LAY, LOUISE BISSELL.

Piano, Silver Spring, Op. 202. Tourbie
BULA JACOBS.

Vocal Duet, The Violet, Op. 168, No. 10. Carl Reinecke
CLARINDA JACKSON, LOUISE BISSELL.

Piano, (a) Gondolieri, Op. No. 2. Ethelbert Nevin
(b) Buona Notte, Op. No. 4. Ethelbert Nevin
PAULINE LAY.

Violin, The Fairy Crew.....Reginald de Koven
ROLAND SUNDOWN.

Piano, A May Song.....Mathilde Bilbro
LUCY KENNEDY.

Piano Duet, Sylphids Waltz, Op. 61.....Max Franke
FLOSSIE KITTLE, BULA JACOBS.

Piano, Song of the Sirens, Op. 59, No. 5.....W. Sege
GERALDINE SUNDOWN.

Piano, The Bell in the Valley.....Herman Wenzel
ETHELYN JOE

Selection from "The Garden of Flowers".....Denza
Girls' Chorus, Soloist, CLARINDA JACKSON.

Piano, On To Victory, March Triumphal.....Sheldon
HARRIET LAY.

Piano Duet, Charge of the Uhlans.....Bohm
PAULINE LAY, LUCY KENNEDY.

America

Thursday evening the Operetta, "A Golden Gift," was very creditably rendered to a large number of people from the reservation and surrounding towns and much credit is due our music teacher, Miss Ruth H. Butts, for this very enjoyable evening. The cast of characters were as follows:

Father TimePhilo Jackson
VesperClarinda Jackson
Hours, TwilightAmy Blackchief
CurfewNellie Lee
Evening StarMaude Bennett
West WindPaul Dean
Sunbeams

Adelaide Parker, Armena Scott, May Griffin.

Raindrops

Stanley George, Clifford Bowen, Ivory White,
David Williams, Daniel Beauvais.

Butterflies

Mary Tarbell, Mabel Abrams, Agnes Jones,
Lillian Huff.

Bumble Bees

Hazel Bowen, Mabel Cole, Belle Moses, Hattie
Cusick, Evelyn Plummer.

Piano Girls

Louise Bissell, Harriet Lay, Lenora Henhawk, Irene
Cusick, Ivy Reuben, Fleeta Nephew, Edna Jones,
Edna Parker, Nina Mt. Pleasant, Rosa Lee,
Alyce Kennedy.

Accompanist.....Miss Bula Jacobs

Friday evening, our closing night, the following program was
given:

March“Gate City”

Lay's Seneca Band.

Invocation.....Rev. James Craig Buchanan

Overture“North Western”

Lay's Seneca Band.

Pantomime“Little America”

Waltz“Under Southern Skies”

Lay's Seneca Band.

Vocal Duet“A Wanderer's Night Song”

Clarinda Jackson and Roland Sundown.

Address.....Mr. George H. Smith

Presentation of DiplomasRev. J. Emory Fisher

“Star Spangled Banner”

BenedictionRev. Fillmore Jackson

Again we were indebted to Lay's Seneca Band for helping to make our closing night enjoyable and I want to take this opportunity of publicly thanking them for their help.

The address given by Mr. George H. Smith of Buffalo, New York, was enjoyed by all and I think it would be very gratifying to Mr. Smith to know that several months after, one of the graduates in writing me quoted from his address. It seemed to inspire in him a desire to go on to attain to higher things.

The new Dairy House built by our men and some Indians hired by the day from the appropriation granted us in 1915 and re-appropriated in 1917 has been completed. The last Legislature appropriated \$8,000 for the equipment of this building. On account of the continued advance in materials it looks very doubtful now whether this amount will be sufficient. If it should not it will be a great disappointment to us for we need very much to move into this building this fall.

I want to emphasize the need of a kindergarten building, the appropriation for which you so wisely cut out this year from your list of appropriations on account of the high cost of materials and the shortage of labor. The necessity for this building is just as apparent as in previous years. Our waiting list is still over 150. The following appropriations, with explanations as to their needs, are desired of the 1919 Legislature:

Personal service	\$32,540 00
Food	12,000 00
Fuel, light, power and water.....	12,000 00
Clothing	6,500 00
Furniture, furnishings and household supplies...	4,000 00
Medical and surgical care, supplies and equipment.	225 00
Farms and garden.....	9,000 00
Roads, grounds and walks.....	150 00
General Administration	2,675 00
Office expenses	800 00
Traveling expenses	600 00
Fixed charges and contributions.....	800 00
Ordinary repairs and renewals, materials, tools and machinery, mechanical	2,250 00
Special services	650 00

DEFICIENCIES

Personal service \$1,050 00

The above deficiency is to cover increases in salaries which have been requested of the Salary Classification Commission and which we wish to have take effect January 1, 1919. On account of the present shortage in labor and the high salaries paid elsewhere it is necessary that increases be granted as quickly as possible if we are to retain some of our present employees.

Equipment \$1,400 00

The amount appropriated for 1918-19 is only about \$150 more than our expenses for 1917-18. On account of the great advance in prices we estimated that it will require an additional \$1,400 to meet the necessary expenditures for the remainder of the year.

Supplies \$1,800 00

The amount appropriated under this item is about \$900 less than that used in 1917-18 and on account of present prices more will be required. Our expenditures for the first six months will amount to considerable more than half of the amount appropriated and more will be required for the next six months on account of agricultural supplies needed at that season.

General plant service..... \$800 00

This increase is necessary on account of increases in the cost of various services and on account of transferring from other deficiencies repairs which are needed outside.

Rents \$100 00

In order to retain a part of the land which we have been renting it was necessary to increase the rental last year, as we fear we may not be able to retain some of the other land rented without increasing the rate paid, we wish to have provision made for this.

Bill of Pittsburg & Shawmut Coal Co. for February, 1918	\$11 85
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In making settlement with the Pittsburg & Shawmut Coal Co., we were governed by prices given us by the Fuel Administration. Since the close of our last year's account we have found that we were misinformed as to prices on a part of February shipments. We are advised that the only way that this can be paid is by securing a deficiency appropriation for this amount.

SPECIAL APPROPRIATIONS

Repairs	\$6,000 00
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This appropriation is needed to cover a new roof on the power house, the replacing of back porches on dormitory buildings, interior and exterior painting, interior varnishing, pointing and general repairs to masonry, repairs to gutters on slate roofs, shingling barns, cleaning and improving water lines from artesian well and painting water tower.

Motor truck	\$6,000 00
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This is for use in hauling coal and other freight. A truck would be of great service to us in this work as our nearest railroad station is four miles distant.

Coal conveyor	\$2,000 00
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This is for unloading coal from cars at the station. This was intended to convey the coal to an overhead bin from which it can be unloaded to wagons or truck without the labor now required in shoveling this by hand. This would greatly expedite the work of unloading and hauling and would save paying demurrage which is sometimes now necessary. On account of present conditions due to the existing war we have omitted some items of construction formerly included in our list of requests, although these are much needed we thought best to defer these until conditions are more favorable for this work.

The shortage of coal last winter gave us considerable uneasiness for during the coldest weather and while we were having our epidemic of measles we were without coal. After having borrowed all we could of the people around us we wired the department asking permission to buy wood. This was rather a discouraging proposition for we could only draw enough with all our teams in one day to last through that day. This condition lasted for about a month before there was coal enough in sight to supply our needs.

The different holidays have been observed in a fitting manner and enjoyed by all. Our Thanksgiving dinner, which is always greatly anticipated by the pupils, was served to both pupils and employees in their dining room, as has been the custom since the completion of this building and was enjoyed as usual, every pupil and employee being able to participate.

On Christmas Eve we had our cantata and a Christmas tree laden with gifts for the pupils, many of them being sent in by their parents or friends.

Employees and pupils responded gladly to the call from the Red Cross for workers and used all their spare time in sewing and knitting, beside giving of their money. War Stamps and Liberty Loan drives were worked with very satisfactory results. Nearly everyone taking just all they felt they possibly could and then one or two more. The War Stamp drive resulted in over \$3,000 being subscribed and the first three Liberty Loans amounted to \$10,700 taken at the institution.

Among the State officials who have visited us during the year, beside the usual inspectors from the Fiscal Supervisor's Department and the State Board of Charities, were: Hon. William R. Stewart, President State Board of Charities; Commissioner Henry Marquand and James H. Foster, of the State Board of Charities; Hon. Frank R. Utter, Fiscal Supervisor; Senator Henry M. Sage, Chairman Finance Committee; Louis F. Pilcher, State Architect; Frank M. Williams, State Engineer; Charles A. Sussdorff, Executive Deputy State Architect; Mason C. Hutchins, Clerk, Senate Finance Committee; L. P. Demars, Clerk, Assembly Ways and Means Committee, and Howard W. Saxton, Chief Examiner Civil Service Commission.

I want to take this opportunity of thanking, one and all, parents and friends who have helped in any way to give our girls and boys added pleasure. As our pupils are very fond of music I knew of no better way of giving them all pleasure than to use the money given by the Young Women's Society of Gowanda and Mrs. H. S. Sisson than to buy victrola records.

In concluding my report for the year permit me to thank you for the cordial support and encouragement, you as a Board of Managers have given, and I would like to take this opportunity of thanking the Fiscal Supervisor's Department for their co-operation and substantial aid. I also want to express my appreciation and heartfelt thanks for the unfailing and loyal assistance given me at all times by the teachers and employees.

Respectfully submitted,

EMILY P. LINCOLN,

Superintendent.

SCHOOL DEPARTMENT

TO EMILY P. LINCOLN, *Superintendent*:

I submit herewith my report from the school department for the year ending June 30, 1918. Pupils were enrolled in the various grades as follows:

Kindergarten

Grant Abrahams,	Norman Plummer,
Calbraith Abrahams,	Adelaide Parker,
Malcolm Allen,	Dorothy Parker,
Thelma Bissell,	Armena Scott,
May Griffin,	Elsie Tallchief,
John Luke,	Hazel Thompson,
Lloyd Luke,	Ivory White,
Angus Montour,	David Williams,
Libbie Moses,	Jerry Williams.

First Grade

Walter Allen,	Edward Printup,
Wilbert Bigtree,	Lila Abrams,
Leroy Doctor,	Alta Button,
Kenneth George,	Hazel Bowen,
Raymond Griffin,	Mabel Cole,
Paul Halftown,	Myra John,
Leslie John,	Laura Luke,
Thomas Jacobs,	Belle Moses,
Lumen Jackson,	Viola Printup,
Clifford John,	Eveline Plummer,
Wilson Jacobs,	Milton Wheeler,
Isaac Jacobs,	Daniel Beauvais,
Leroy Jones,	Charles Bero.
William Lazore,	

Second Grade

Angus Chubb,
 Harry Green,
 Hamilton Jimerson,
 William Jones,
 Glenny Jimerson,
 Foster Jonathan,
 Herbert John,
 Carlton Jimerson,
 Angus Lazore,
 Spencer Pierce,

Wilford Pierce,
 Harold Printup,
 Charles Tarbell,
 Lena Jimerson,
 Flora Jimerson,
 Cynthia Jimerson,
 Evelyn John,
 Bertha Lee,
 Marion Seneca,
 Ruby White.

Third Grade

Ethel Bissell,
 Hattie Bissell,
 Hattie Cusick,
 Elsie Jimerson,
 Ivy Jackson,
 Eunice Lay,
 Doris Pierce,
 Dorothy Pierce,
 Ruby Plummer,
 Edna Mae White,
 Sophelia White,
 Lloyd Abrams,
 Clifford Bowen,

Elon Bennett,
 Nelson Chew,
 Arnold Doxtator,
 Lester Eels,
 Stanley George,
 William Harris,
 Ernest Jonathan,
 Elon Maybee,
 Charles Pierce,
 Willie Pierce,
 Nathan Jones,
 Mitchel Bero,
 Frank Jackson.

Fourth Grade

Mabel Abrams,
 Lucy Abrams,
 Elizabeth Harris,
 Lillian Huff,
 Lydia Jimerson,
 Agnes Jones,
 Mamie Jackson,
 Nina Mt. Pleasant,
 Pauline Parker,
 Gwendolyn Pierce,
 Delma Spring,
 Mary Tarbell,

Dora White,
 Iva Tallchief,
 Irving Bissell,
 Delos Beckman,
 Chester Bred,
 Peter Crow,
 Mitchel Jacobs,
 Mitchel Luke,
 Elon Logan,
 Victor Pierce,
 John Pierce,
 Gilbert Peters.

Fifth Grade

Archie Bowen,
 Paul Dean,
 Cephas Hill,
 Alton Joe,
 Nelson Ninham,
 Eugene Terrance,
 Charles Bissell,
 Jabez Pierce,
 Geneva Bowen,
 Aleta Chew,

Evangeline Halftown,
 Bessie Jones,
 Ruby Jimerson,
 Margaret John,
 Doris Parker,
 Sarah Pierce,
 Delphina Pierce,
 Rhea Pierce,
 Viola Peters,
 Mary Titus.

Sixth Grade

Jerry Cooper,
 Clifford George,
 Raymond John,
 Ernest Lee,
 Archie Logan,
 Jacob Shongo,
 Jerome Skye,
 Paul Terrance,
 Hattie Cornplanter,
 Irene Cusick,

Dorothy Harris,
 Marjorie Jacobs,
 Berusha Jimerson,
 Rosa Lee,
 Ivy Reuben,
 Glenora Scott,
 Sara Tarbell,
 Margaret Tarbell,
 Edith Tallchief,
 Loretta Titus.

Seventh Grade

Louise Bissell,
 Josephine Bred,
 Leona Button,
 Nora Cooper,
 Gilbert Halftown,
 Lenora Henhawk,
 Stewart Huff,
 Edna Mae Jones,
 Alyce Kennedy,
 Maxwell Lay,
 Tommy Macumber,

Mary Moses,
 Fleta Nephew,
 Edna Parker,
 Carrie Phillips,
 Warren Pierce,
 Franklin Seneca,
 Agnes Synder,
 Geraldine Sundown,
 Lawrence Williams,
 Lydia Harris.

Eighth Grade

Maude Bennett,
Amy Blackchief,
Betsy Carpenter,
Victor Dockstader,
Amelia Dowdy,
Hilton Henhawk,
Clarinda Jackson,
Bula Jacobs,
Ethelyn Joe,
Willie Jones,
Cassis Jimerson,
Lucy Kennedy,
Flossie Kittle,
Mabel Lee,

Nellie Lee,
Beulah Parker,
Mina Patterson,
Elsa Pierce,
Myra Pierce,
Nora Sandy,
Hazel Shongo,
Herman Shongo,
Roland Sundown,
Eva Twoguns,
Percy White,
Malvina Thompson,
Andrew Francis.

A good share of my time was spent outside of the school looking after Special Fund construction work about the institution. I feel that excellent progress along the usual lines of activity was made owing largely to the diligence and devotion of the other teachers. Our work was interrupted during the year by a serious epidemic of measles followed by an epidemic of scarlet fever, but both pupils and teachers met the situation with courage and determination and did their best to make up for the time lost.

Twelve completed our regular course and were graduated in June. Our music work was usually interesting and profitable to the pupils and the various programs rendered during the year proved highly pleasing to all. The pupils of all grades received instruction in theoretical and vocal work. Thirty girls and one boy had piano lessons and two boys received lessons on the violin.

The work of the domestic science department proved very interesting and beneficial throughout the year. Several luncheons and dinners were served which proved credit to both teachers and pupils. During our closing week this department furnished an exhibit which any school might be proud of. Eight girls completed the course and received domestic science diplomas in addition to their diplomas from the regular school work.

The weaving work was very successful during the first half of the year but owing to the fact that we were unable to secure a teacher for the seventh grade, Miss Anderson was obliged to give up her weaving work and take charge of the seventh grade for the last half of the year.

For some time we have felt the need of having a special teacher to give backward pupils individual assistance. Last year we tried the experiment by letting one of our regular teachers devote part of her time to the ones who could not otherwise keep up with their grades.

We feel that the results warrant a further extension of this line of work.

We are much in need of better quarters for our cooking, sewing and weaving classes. We have been using basements because we have had no other place. The classes have done good work, but I feel that out of justice to both pupils and teachers we must provide some other place soon.

I wish to thank you as Superintendent and also all the teachers for their co-operation during the past year.

Respectfully submitted,

J. C. BRENNAN,
Principal.

MATRON'S REPORT

To EMILY P. LINCOLN, *Superintendent*:

In planning the work for our girls I try to keep in mind that it is the policy of the school to educate our girls and boys along practical lines, always thinking about what will be of the most help to them when through school, or in other words, what will best fit them to be self-supporting or help them most to be good home-makers. In keeping this in view our girls' work of a necessity runs along very much the same lines from year to year.

I cannot say too much in praise of our domestic science course. Many of our girls are getting to be quite efficient along the culinary line as has been proven to us when it has been necessary to call upon some of them to help out in the kitchen when we have been short a cook. The sewing done in this department this year deserves special praise, most of the girls doing excellent work. The following is a list of garments made by them:

Dresses	35
Uniform caps	6
Aprons	14
Underskirts	2
Princess-slips	6
Nightgowns	9
Corset covers	8
Crochet edging, yards.....	35
Crochet yokes	23

RED CROSS WORK

Men's hospital shirts.....	12
Children's dresses	7
Knitted wash cloths.....	25

The other sewing classes have helped more with the regular sewing work, making all the button holes, sewing on the buttons, doing the overcasting, besides doing their own mending and when

time permits making whole garments. The following is a list of garments made by the seamstresses and the classes of a period of one hour each school day:

Aprons, gingham	31
Aprons, denim	7
Bags, jelly	4
Bibs	91
Curtains, pairs	12
Drawers, pairs	52
Dresses, blue	230
Dresses, graduating	8
Dresses, light	81
Dresses, night	99
Dresses, wool	4
Jackets	81
Napkins, sanitary	78
Napkins, table	144
Overalls, pairs	45
Pads, mattress	12
Pants, cotton, pairs	77
Pants, wool	173
Pillow cases	391
Sheets	132
Skirts, dark	112
Skirts, light	46
Shirts, night	46
Suspenders, pairs	67
Strainers, milk	2
Table cloths, white	10
Table cloths, red	46
Towels	451
Towels, huck	25
Underskirts'	79
Underwaists	129
Waists, blue	106
Waists, white	26
Wash cloths	275

Costumes:

Gowns	3
Coats	3
Pants, pairs	5
Clown suit	1

Respectfully submitted,
HALLA WELLS,
Matron.

TRADE SCHOOL

TO EMILY P. LINCOLN, *Superintendent*:

My boys have been considerably younger this year than in previous years, but some of them have shown an unusual aptness along our line of work and have been more anxious to learn in many cases than the older boys. They have been especially interested in the making of the chairs for their dining room. Although 200 chairs was quite an undertaking and we did not commence them until this spring, many boys would have gotten tired and lost interest, but they have been right here ready for work and at the close of the year we have 150 out of the 200 finished.

With my class of five boys in the forenoon and four in the afternoon the following work has been accomplished:

Circle screens, 3-0 x 7-0.....	4
Box frames and sash, 12 lights for frame circle head...	4
Cellar frames and sash, 3 lights for frame circle head...	6
Munion frames and sash, 24 lights for frame circle head.	2
Single frames and sash, 12 lights for frame circle head..	4
Flight of stairs, 20 rises.....	1
Oak newel post.....	1
Oak rail and baluster.....	1
Landing post	1
Door frame, 3-0 x 6-8.....	1
Door frame, 2-8 x 6-8.....	1
Door frame, 3-0 x 6-8.....	1
Outside door frame and oak sill, 2-8 x 7-4.....	1
Window frames and sash, 2 lights, 12 x 16.....	2
Munion frame and sash, 16 lights, 12 x 12.....	1
Margain, light door frame, 6 x 7-4.....	1
Victrola cabinet	1
Step ladder, 5-6.....	1
Chicken house	1
Transom, double door frame and sash, 5-8 x 8-0.....	1
Door, 2-8 x 7-4 x 1 ³ / ₄	1

Door, 2-2½ x 6-2 x 1¾.....	1
Door, 2-8 x 6-6 x 1¾.....	1
Screens, 2-9 x 6-0, 66 sq. ft.....	1
Screens, 3-6 x 6-0, 84 sq. ft.....	4
Screens, 18 x 3-2, 9½ sq. ft.....	2
Screens, 3-6 x 6-0, 153½ sq. ft.....	7
Screens, 6-0 x 6-3, 75 sq. ft.....	2
Screens, for veranda, 80 sq. ft.....	1
Inlaid oak platform, 6 x 12 x 1.....	1
Dining room chairs, oak.....	150
Small oak tables	4
Center table	1
Stand	1
Benches	2
Magazine rack	1
Oak sash, glass, 18 x 20, 2 lights.....	1
Screen door, 3-0 x 7-6.....	1

Respectfully submitted,

ANTON F. LORENZ,

Instructor in Carpentry.

REPORT OF THE STEWARD

To EMILY P. LINCOLN, *Superintendent*:

I present to you herewith my report as steward for the year ending June 30, 1918:

Total value of real estate June 30, 1918.....	\$210,592 26
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As the Thomas Indian School is situated on the Cattaraugus Indian Reservation, the farm land has no market value, but this is included at the relative value of farm land in the adjoining territory.

Total value of personal property, June 30, 1918...	38,032 30
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Total value of institution property.....	\$248,624 56
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Number of acres of land owned by institution....	100
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Number of acres of land rented.....	100
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Total number of acres for institution uses...	200
---	-----

Number of acres of land occupied by buildings...	25
--	----

FARM AND GARDEN

Number of acres of land in garden.....	12
--	----

Number of acres of land in orchard, vineyard and berries	4
--	---

Number of acres of land in potatoes.....	12
--	----

Number of acres of land in meadow.....	38
--	----

Number of acres of land in pasture.....	23
---	----

Number of acres of land in field crops.....	86
---	----

Total number of acres devoted to farm purposes	175
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In order to give a complete account of the farming operations for one year, the following report is made to cover the period from January 1, 1917, to December 31, 1917:

GARDEN

Debit

Cost of seed, fertilizer, implements, labor and rent of land	\$464 53
Value of home product seed and fertilizer.....	124 05
Total	<u>\$588 58</u>

Credit

Beet greens, 25 pounds.....	\$0 50
Beans, string, 402 pounds.....	12 06
Beans, dry, 100 bushels.....	600 00
Beans, lima, green, 386 pounds.....	23 16
Beets, 553 bushels.....	414 75
Cabbage, 124.47 cwt.....	124 47
Carrots, 490 bushels.....	367 50
Cauliflower, 178.5 pounds.....	8 93
Celery, 568 pounds.....	28 40
Corn, sweet, 29.35 cwt.....	44 03
Corn, pop, 24 bushels.....	36 00
Cucumbers, 1,289.5 pounds.....	64 48
Horseradish, 91 pounds.....	4 55
Lettuce, 165.75 pounds.....	6 63
Onions, 164.25 bushels.....	287 44
Onions, green, 1,082.5 pounds.....	32 47
Peas, green, 421 pounds.....	16 84
Peppers, 3/8 pound.....	04
Pumpkin, .746 tons.....	5 22
Radish, 80 pounds.....	2 00
Rhubarb, 1,730 pounds.....	43 25
Spinach, 66.5 pounds.....	2 33
Squash, summer, 3.99 cwt.....	2 99
Squash, winter, 26.57 cwt.....	39 86
Tomatoes, 9.735 cwt.....	14 60
Turnips, 700 lbs.....	10 50
Total	<u>\$2,193 00</u>
Profit	<u>\$1,604 42</u>

FRUIT

Debit

Cost of labor, implements, etc.....	\$209 10
Value of home product fertilizer.....	50 00
	<hr/>
Total	\$259 10
	<hr/>

Credit

Apples, 66 bushels.....	\$49 50
Currants, 16 quarts.....	1 92
Grapes, 2,115 pounds.....	63 45
Pears, 30 bushels.....	37 50
Blackberries, 1,218 quarts.....	146 16
Strawberries, 154 quarts.....	18 48
Raspberries, black, 22 quarts.....	2 64
Raspberries, purple, 354 quarts.....	49 56
	<hr/>

Total	\$369 21
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Profit	\$110 11
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POTATOES

Debit

Cost of seed, spraying material, implements, rent of of land, and labor.....	\$387 00
Value of home product seed and fertilizer.....	706 25
	<hr/>

Total	\$1,093 25
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Credit

Potatoes, 2,100 bushels.....	\$3,150 00
------------------------------	------------

Profit	\$2,056 75
--------------	------------

FIELD CROPS

Debit

Cost of seed, fertilizer, binding twine, threshing grain, cutting ensilage, rent of land, labor, implements, etc.	\$1,935 43
Value of home product seed and fertilizer.....	694 70
Total	<u>\$2,630 13</u>

Credit

Hay, timothy, 70 tons.....	\$1,120 00
Hay, mixed, 71 tons.....	994 00
Wheat, 314 bushels.....	628 00
Buckwheat, 104 bushels.....	124 80
Oats, 1,220 bushels.....	915 00
Straw, wheat, 10 tons.....	80 00
Straw, oat, 30 tons.....	240 00
Corn fodder, dry, 20 tons.....	50 00
Corn fodder, green, 6 tons.....	21 00
Corn silage, 180 tons.....	720 00
Alfalfa, green, 16 tons.....	80 00
Clover, green, 1/2 ton.....	2 50
Total	<u>\$4,975 30</u>
Profit	<u><u>\$2,345 17</u></u>

DAIRY

Debit

Stock purchased	\$100 00
Feed purchased	1,084 92
Field crops, home product.....	1,629 00
Veterinary services	33 90
Labor	550 00
Rent of pasture.....	95 00
Grinding feed	2 02

Farming implements	45 00
Miscellaneous	76
	<hr/>
	\$3,540 60
Inventory of stock January 1, 1917.....	2,255 00
	<hr/>
Total	\$5,795 60
	<hr/>

Credit

Cream, 1,759.5 quarts.....	\$462 27
Milk, 11,185 quarts.....	615 18
Butter, 4,107.75 pounds.....	1,658 59
Buttermilk, 8,377 quarts.....	167 54
Milk, skimmed, 1,032.13 cwt.....	361 25
Beef, 1,204 pounds.....	200 13
Stock sold	27 00
Hides	5 10
Manure	505 25
	<hr/>
	\$4,002 31
Inventory of stock December 31, 1907.....	3,350 00
	<hr/>
Total	\$7,352 31
	<hr/>
Profit	\$1,556 71
	<hr/> <hr/>
Average number of cows milked during year.....	23.4
Average yearly production per cow (pounds)....	6,594.9
	<hr/> <hr/>

SWINE

Debit

Feed purchased	\$502 40
Field crops, home product.....	60 00
Labor	100 00
Grinding feed	76
Farm implements	7 00
	<hr/>
	\$670 16
Inventory of stock January 1, 1917.....	870 00
	<hr/>
Total	\$1,540 16
	<hr/>

Credit

Stock sold	\$8 00
Pork produced, 6,477.25 pounds.....	1,028 72
Manure	116 25
Services	2 00
	<hr/>
	\$1,154 97
Inventory of stock December 31, 1917.....	1,180 00
	<hr/>
Total	\$2,334 97
	<hr/>
Profit	\$794 81
	<hr/> <hr/>

POULTRY

Debit

Eggs used for hatching.....	\$106 15
Feed purchased	899 23
Field crops, home product.....	406 15
Labor	375 00
Farm implements	7 00
Miscellaneous	15 60
	<hr/>
	\$809 13
Inventory of stock January 1, 1917.....	662 50
	<hr/>
Total	\$2,471 63
	<hr/>

Credit

Eggs, 3,181 2/3 dozen.....	\$1,049 95
Chickens, 1,312 pounds.....	301 76
Manure	111 90
	<hr/>
	\$1,463 61
Inventory of stock December 31, 1917.....	1,086 00
	<hr/>
Total	\$2,549 61
	<hr/>
Profit	\$77 98
	<hr/> <hr/>

Respectfully submitted,

IDA L. BUNN,

Steward.

REPORT OF THE FARMER

TO EMILY P. LINCOLN, *Superintendent*:

The work on the farm from year to year runs along practically the same lines. Aside from the regular farm work and the drawing of the coal our teams have done considerable hauling of freight, gravel and sand in connection with our special fund work.

The produce harvested from the farm last fall was certainly very gratifying for we never harvested as large crops, as will be shown by comparing the steward's report of this year with those of previous years. Our harvest of potatoes was especially large and as we could not use them all, this spring we sold 360 bushels beside loaning 226 bushels of seed potatoes to some of the Indian people to be returned in the fall. This was suggested by the Agricultural Department after their having visited several of the reservations and learning that the lack of money to buy seed with kept many of them from cultivating more land.

The indications are now that the potato crop will be rather light this fall so think it a wise thing that the department allowed us to loan the potatoes instead of our selling them. I want to mention the willingness and faithfulness with which my boys worked all through the past year.

The following is an inventory of the stock on hand:

Bull	1
Cows	26
Heifers	14
Boar	1
Pigs	25
Shoats	35
Sows, brood	4
Horses, driving	3
Horses, work	12
Colts	4
Chickens	550
Cocks	15
Hens	576

Respectfully submitted,

CARL DANKERT, *Farmer*.

REPORT OF THE ATTENDING PHYSICIAN

To the Board of Managers:

I beg to submit, herewith, my report as attending physician, for the fiscal year ending June 30, 1918.

During the above stated period the following named diseases have been under my treatment:

Tuberculosis, glands	2	Chorea	3
Tuberculosis, lungs	1	Chlorosis	2
Tuberculosis, spinal	2	Chole-cystitis	1
Measles	111	Eczema	1
German measles	2	Impetigo	48
Scarlet fever	9	Herpes	2
Diphtheria	2	Abscess	3
Chicken pox	22	Boils	1
Tonsillitis	8	Conjunctivitis	11
Influenza	11	Inflammation middle ear	13
Pneumonia	5	Wounds	8
Bronchitis	1	Fracture, clavicle	1
Mumps	15	Amputation, fingers	1
Rheumatism	1	Poison ivy	1
Myocarditis	1		

Three fatal cases have occurred, namely from measles.

One fatal case has occurred, namely from heart disease.

One transfer, namely tuberculosis of the spine, has been made to the Erie County Hospital.

As will be observed, taking into consideration the fact that there are about 200 pupils in attendance at the school, the extent of sickness has been remarkably low. Two epidemics, the one of measles, the other of chicken pox, both of a mild character, have existed.

Through considerable effort a good many sanitary conditions have been maintained, but it must be taken into account that the present buildings were erected with the intent to care for only 140 pupils, and the population has now increased to 200. This

demonstrates the fact that the air space is insufficient and that to maintain a healthful condition, an additional building is necessary.

I cannot too strongly urge also, the necessity of an appropriation providing for the erection of an industrial building wherein these Indian boys and girls may receive adequate training so essential to their success in life after leaving the institution. I trust this matter may receive the serious consideration of your Board, and may result in such action on your part as to secure aid from the Legislature that will bring about this very desirable end.

Respectfully submitted,

A. D. LAKE,
Attending Physician.

**REPORT OF EMILY P. LINCOLN, TREASURER, FOR
THE YEAR ENDING JUNE 30, 1918**

RECEIPTS

Cash on hand July 1, 1917.....	\$1,595 49
Received from Comptroller.....	64,694 00
Miscellaneous receipts	230 53
	<hr/>
	\$66,520 02
	<hr/> <hr/>

DISBURSEMENTS

Personal service	\$27,116 43
Food	8,744 09
Fuel, light, power, water.....	8,712 99
Equipment	5,647 18
Supplies	7,221 02
Materials	1,470 48
Traveling expenses	264 43
Communication	678 14
Fixed charges and contributions.....	624 64
General plant service.....	1,360 14
Rents	557 50
Remittance to State Treasurer.....	1,826 02
	<hr/>
	\$64,223 06
	<hr/>

Cash on hand June 30, 1918.....	\$2,296 96
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Per capita cost of maintenance.....	\$350 84
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STATEMENT OF ATTENDANCE DURING THE YEAR ENDING JUNE 30, 1918

Number of pupils enrolled in the institution July 1, 1917	204
Number of pupils admitted during the year.....	34
Number of pupils discharged during the year...	49
Number of pupils died during the year.....	4
Number of pupils in institution June 30, 1918..	184
Average population for the year ending June 30, 1918	177.19

CATALOG OF CHILDREN WITH THEIR NATIONAL- ITY AND THE RESERVATION FROM WHICH EACH CAME

ALLEGHANY RESERVATION

<i>Females</i>	<i>Nationality</i>
Bowen, Geneva	Seneca
Bowen, Hazel	Seneca
Cooper, Nora	Seneca
Crouse, Elsie	Seneca
Griffin, May	Seneca
Halftown, Evangeline	Seneca
Harris, Elizabeth	Cayuga
Harris, Dorothy	Cayuga
Henhawk, Lenora	Seneca
Jackson, Clarinda	Seneca
Jimerson, Cynthia	Seneca
Jimerson, Lena	Seneca
Jimerson, Flora Marie.....	Seneca
Jimerson, Cassie	Seneca
John, Myra	Seneca

<i>Females</i>	<i>Nationality</i>
Jones, Bessie	Seneca
Lee, Mabel	Seneca
Lee, Nellie	Seneca
Lee, Rosa	Seneca
Lee, Bertha	Seneca
Pierce, Dorothy	Seneca
Plummer, Eveline	Seneca
Plummer, Ruby	Seneca
Shongo, Hazel	Seneca
Snyder, Agnes	Seneca
Titus, Loretta	Seneca
Titus, Mary	Seneca
White, Ethel	Onondaga

<i>Males</i>	<i>Nationality</i>
Abrams, Grant	Seneca
Bowen, Archibald	Seneca
Bowen, Clifford	Seneca
Griffin, Raymond	Seneca
Halftown, Gilbert	Seneca
Halftown, Paul	Seneca
Harris, William	Cayuga
Jimerson, Burt	Seneca
Jimerson, Glenney	Seneca
Jimerson, Hamilton	Seneca
John, Floyd	Seneca
John, Leslie	Seneca
Jones, Leroy	Seneca
Lee, Ernest	Seneca
Maybee, Elon	Seneca
Pierce, Charles	Seneca
Pierce, John	Seneca
Pierce, Spencer	Seneca
Pierce, Wilford	Seneca
Plummer, Norman	Seneca
Shongo, Herman	Seneca
Shongo, Jacob	Seneca

CATTARAUGUS RESERVATION

<i>Females</i>	<i>Nationality</i>
Abrams, Lucy	Seneca
Abrams, Lila	Seneca
Abrams, Mabel	Seneca
Armstrong, Gertrude	Seneca
Bennett, Maude	Seneca
Button, Alta	Seneca
Button, Leona	Seneca
Cornplanter, Hattie	Seneca
Dowdy, Amelia	Seneca
Harris, Lydia	Seneca
Huff, Lillian	Seneca
Jackson, Ivy	Seneca
Jackson, Mamie	Seneca
Jimerson, Berusha	Seneca
Jimerson, Lydia	Seneca
Joe, Ethelyn	Seneca
John, Evelyn	Cayuga
John, Margaret	Seneca
Kennedy, Alyce	Seneca
Kennedy, Lucy	Seneca
Kittle, Flossie	Seneca
Kittle, Mabel	Seneca
Lay, Harriet	Cayuga
Lay, Eunice	Seneca
Luke, Laura	Seneca
Moses, Mary	Seneca
Nephew, Fleta	Seneca
Parker, Doris	Seneca
Parker, Edna	Seneca
Parker, Adelaide	Seneca
Parker, Dorothy	Seneca
Phillips, Carrie	Cayuga
Pierce, Delphina	Seneca
Pierce, Elsa	Cayuga
Pierce, Gwendolyn	Seneca
Pierce, Sarah	Seneca

<i>Females</i>	<i>Nationality</i>
Pierce, Dema	Seneca
Printup, Viola	St. Regis
Seneca, Marion	Seneca
Sandy, Nora	Seneca
Scott, Armena	Seneca
Shongo, Bessie	Seneca
Tallchief, Edith	Tuscarora
Tallchief, Elsie	Seneca
Tallchief, Iva	Tuscarora
Thompson, Malvina	Seneca
Twoguns, Eva	Seneca
White, Edna Mae	Seneca
White, Ruby	Seneca
White, Dora B.	Seneca

<i>Males</i>	<i>Nationality</i>
Abrams, Lloyd	Seneca
Abrams, Calbraith	Seneca
Bennett, Elon	Seneca
Bullis, Jacob	Seneca
Cooper, Jerriet	Seneca
Crow, Peter	Seneca
Doctor, Leroy	Seneca
Doxstader, Victor	Seneca
Doxstader, Arnold	Seneca
Eels, Stanley	Seneca
Eels, Lester	Seneca
Green, Harry	Seneca
Huff, Stewart	Seneca
Jackson, Luman	Seneca
John, Floyd	Seneca
John, Herbert	Seneca
John, Raymond	Seneca
John, Clifford	Seneca
Jones, William	Seneca
Joe, Atlas Alton	Seneca
Jimerson, Carlton	Seneca
Lay, Maxwell	Cayuga

<i>Males</i>	<i>Nationality</i>
Luke, Mitchell	Seneca
Luke, John	Seneca
Luke, Lawrence	Seneca
Pierce, Jabez	Seneca
Pierce, Warren	Seneca
Pierce, William	Seneca
Pierce, Victor	Seneca
Printup, Edward	St. Regis
Seneca, Franklin	Seneca
Twoguns, Noah	Seneca
White, Percy	Seneca
Wheeler, Milton	Seneca
White, Ivory	Seneca
Williams, Jerry	Seneca
Williams, David	Seneca

ONONDAGA RESERVATION

<i>Females</i>	<i>Nationality</i>
Bred, Josephine	Oneida
Cole, Mabel	St. Regis
Jacobs, Bula	Onondaga
Jacobs, Marjorie	Onondaga
Jones, Agnes	St. Regis
Jones, Edna	St. Regis
Moses, Belle	St. Regis
Moses, Libbie	St. Regis

<i>Males</i>	<i>Nationality</i>
Beckman, Delos	Onondaga
Bred, Chester	Oneida
George, Clifford	Seneca
George, Kenneth	Onondaga
George, Stanley	Seneca
Hill, Halley	Seneca
Jacobs, Wilson	St. Regis
Jacobs, Thomas	Onondaga
Logan, Elin	Onondaga
Logan, Archie	Onondaga
Ninham, Nelson	Oneida

ST. REGIS RESERVATION

<i>Females</i>	<i>Nationality</i>
Tarbell, Mary	St. Regis
Tarbell, Sara	St. Regis
Tarbell, Margaret	St. Regis

<i>Males</i>	<i>Nationality</i>
Allen, Walter	Iroquois
Allen, Malcolm	Iroquois
Bigtree, Wilbert	St. Regis
Beauvais, Daniel	St. Regis
Chub, Angus	St. Regis
Dean, Paul	St. Regis
Francis, Andrew	St. Regis
Bero, Charles	St. Regis
Bero, Mitchell	St. Regis
Casey, Abraham	St. Regis
Jacobs, Mitchell	St. Regis
Jacobs, Isaac	St. Regis
Jackson, Frank	St. Regis
Lazor, Angus	St. Regis
Lazor, William	St. Regis
McCumber, Thomas	St. Regis
Montore, Angus	Onondaga
Mitchell, Lewis	St. Regis
Tarbell, Charles	St. Regis
Terrance, Paul	St. Regis
Terrance, Eugene	St. Regis

TONAWANDA RESERVATION

<i>Females</i>	<i>Nationality</i>
Blackchief, Amy	Seneca
Carpenter, Betsy	Seneca
Ground, Fidelia	Seneca
Jimerson, Elsie	Seneca
Jimerson, Ruby	Seneca
Parker, Bula	Seneca
Parker, Mildred	Seneca
Parker, Pauline	Seneca
Reuben, Ivy	Seneca

<i>Females</i>	<i>Nationality</i>
Spring, Delma	Seneca
Sundown, Geraldine	Seneca
White, Sophelia	Seneca

<i>Males</i>	<i>Nationality</i>
Ground, William	Seneca
Hill, Cephas	Seneca
Jonathon, Ernest	Seneca
Jonathon, Foster	Seneca
Moses, Augustus	Seneca
Peters, Gilbert	Seneca
Printup, Harold	Seneca
Skye, Jerome	Seneca
Sundown, Roland	Seneca

TUSCARORA RESERVATION

<i>Females</i>	<i>Nationality</i>
Bissell, Ethel	Mohawk
Bissell, Hattie	Tuscarora
Bissell, Louise	Mohawk
Bissell, Thelma	Mohawk
Chew, Leta	Seneca
Cusick, Irene	Tuscarora
Cusick, Viola	Tuscarora
Garlow, Alice	Onondaga
Mt. Pleasant, Nina	Tuscarora
Patterson, Mina	Tuscarora
Thompson, Hattie	Tuscarora
Thompson, E. Hazel	Onondaga

<i>Males</i>	<i>Nationality</i>
Bissell, Charles	Tuscarora
Bissell, Irving	Mohawk
Bissell, Joseph	Tuscarora
Chew, Nelson	Seneca
Hess, Oscar	Mohawk
Jones, Nathan	Tuscarora
Jones, William	Tuscarora
Williams, Lawrence	Mohawk

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